

Streamlining of the Procurement of Consultant Design Services

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I. The Problem

In November of 2006, the South Carolina Department of Transportation (SCDOT) received a management review from the South Carolina General Assembly's Legislative Audit Council (LAC) concerning the management of resources within SCDOT. In the audit, the LAC asserted that improvements could be made in the areas of Contract Management, Program Management and Administrative Management. Also, several public inquires were made concerning the approval process of projects within SCDOT.

In response to the audit and inquires, the General Assembly passed Act 114 of 2007 (Signed by the Governor June 27, 2007) to address these issues. To comply with Act 114, SCDOT developed procedures and guidelines that would ensure abiding by the new law as well as addressing concerns brought up in the audit by the LAC. Several processes including Commission Approval and Consultant Proposal Review were adopted to address these issues.

As a result of the audit, changes in SCDOT's Departmental Directive 41 (Professional Consultant Services - Acquisition and Administration) were made to redefine the selection, approval and negotiation of Consultants. Combined with Commission Approval Processes and the Consultant Selection Process, the Consultant Negotiation Process detailed in Directive 41 provides the baseline for selecting consultants for design services.

Understanding the length of time it takes to procure consultant services is critical in properly scheduling project development activities. Unnecessary delays in schedules could be detrimental to a project's development from the timing and scheduling standpoint. Also, many man-hours are involved in these processes at a cost to SCDOT's limited available funding. Any delays in schedule could also result in increase costs to the project based on growing construction costs. Lastly, public perception of projects being delayed could result in lost

confidence in SCDOT's ability to use State Funds efficiently and prudently. Ultimately, the traveling public is the most important "player" when developing a project. To date, no analysis has been done on the effectiveness and time duration of these new processes.

II. The History

SCDOT's Responsibilities

SCDOT is responsible for planning, constructing, maintaining, and operating the state highway system and providing mass transit services. Its mission is to provide a safe and efficient transportation system for the state. SCDOT is one of the largest state agencies with a staff of approximately 5,000 employees. SCDOT also has 7 district offices and its employees work in each of the state's 46 counties. (Appendix A, LAC Report, Ch 1,p 3)

SCDOT is governed by the South Carolina Transportation Commission (Commission), which is comprised of seven members, six of whom are elected by the legislative delegations of each of the state's Transportation Districts. These Transportation Districts coincide with the state's Congressional Districts. One at-large member is appointed by the Governor. The Commission elects a Chairman in June of each year to serve during the state fiscal year of July - June. The Commission adopts its own rules and procedures, and serves as a general policy-making body for the various functions and purposes of the S.C. Department of Transportation as prescribed by law. The Secretary of Transportation is appointed by the Governor as the chief administrative officer of the Department, who carries out the policies of the Commission, and represents the Department in dealings with other state agencies, local governments, special districts, other states and the federal government. (SCDOT Website, "Meet the Commission")

The Secretary of Transportation has three deputies as a part of his administrative staff. The Deputy Secretary for Engineering, the Deputy Secretary for Finance and Administration and the Deputy Secretary for Mass Transit make up the administrative staff. For the purposes of this review, the Deputy Secretary for Engineering is named for the signature authority for consultant contracts. (Appendix B, Departmental Directive 24)

The ability to use consultant services to offset limited resources is vital to the prosecution of work for SCDOT. With over \$600,000 million allocated to construction per year, SCDOT requires the services of consultants to supplement the required workforce needed to accomplish this task. Although many offices within the SCDOT employ consultant services to augment their assets, the procuring consultant services under the Office of Preconstruction will be the subject of this review. The Director of Preconstruction will be identified as the "Director" throughout this report. The Director is responsible for allocating assets within his department and initiates the request for consultant services.

Securing Consultant Services: Before and After

The LAC report recommended that proper documentation of commission approval is needed in the consultant selection files. (Appendix A, LAC Report, Ch.2, Rec.7) In response to the LAC report in its entirety, the General Assembly passed Act 114 of 2007. Section 57-1-370 of ACT 114 stated, "The commission must give its prior authorization to any consulting contracts advertised for or awarded by the department and authorize the selection of consultants by department personnel." Prior to ACT 114, SCDOT requested Commission approval to advertise and select a Consultant, and once a contract was signed, it was disseminated to the Commission for information only, not for approval.

Prior to the LAC Report, SCDOT used Departmental Directive 41 developed in 2003 to outline the process for procuring consultant services. Prior to 2003, SCDOT used Engineering Policies and Procedures Memorandums (P1) to outline the process. After the LAC report in November 2006, SCDOT adopted the new Directive 41 in May of 2007. The 2007 version of Directive 41 included a “Chief Negotiator”, which was not included in the 2003 version. The 2007 Directive 41 has since been replaced by the 2008 Directive 41 revised in July of 2008. The 2008 version however did not change any of the processes in whole and only strengthened defined roles and procedures. (Appendix B, Departmental Directive 41)

III. The Process

In first defining process for the procurement of consultant services, several assumptions are made in order to streamline and simplify the process analysis. The four processes that make up the procurement of consultant services are listed below.

- Initial Commission Approval Process
- Consultant Selection Process
- Consultant Negotiation Process
- Final Commission Approval Process

Commission Approval Processes - Initial and Final

The steps involved for both the Initial and Final Commission Approval are outlined through established processes developed to conform to the requirements of ACT 114. These processes are spelled out in either SCDOT Departmental Directives or an “Established Processes”. “A Departmental Directive is a written statement from the Secretary of Transportation of the Department of Transportation that furnishes guidance and direction for all employees.”

(Appendix B, Departmental Directive 1) An “Established Process” is defined as any process directed by senior management, formal or informal, that spells out how Department employees are to conduct a task. The directives and established processes will give direction on submitting and approving documentation needed for Commission approval. To help streamline the review of these processes, it is assumed that there are no changes or corrections needed on submittals of procedural forms and that all approvals are given at the first time of the submittal.

As described in SCDOT’s Departmental Directive 13, ACT 114 requires the Commission to give prior authorization for certain procurement actions as follows:

- ***Consultant Contracts*** - The Commission must give prior authorization for the advertisement for any consultant contracts, selection of consultants by SCDOT personnel, and final award of the contract. See Section 57-1-370(E).
- *Contracts in excess of \$500,000* - The Commission must give prior authorization for SCDOT to enter into any contract with a value in excess of \$500,000. See Section 57-1-370(L).
- *Additional contracts to same entity exceeding \$500,000 in the aggregate in a fiscal year* – The Commission must give prior approval to any additional contracts SCDOT wishes to enter into during a fiscal year with an entity that has already received individual contracts during that fiscal year that in the aggregate are at least \$500,000 in value. See Section 57-1-370(M). (Appendix B, Departmental Directive 13)

For the purposes of this review, efforts to analyze the selection of a contractor will concentrate on the “Consultant Contracts” as described above. There are several types of consultant contracts such as On-Call Contracts, Contract Modifications and Basic Agreement Contracts that could be used in this analysis. The Basic Agreement Contract, described herein as Turn-Key, will be used for the purpose of this analysis. The Basic Agreement is defined as a “standard agreement to be used to contract with a consultant for a stated scope of services on a specific project at a specified maximum cost”. (Appendix B, Departmental Directive 41, III, A) This Basic Agreement then will be the basis for contracting with a consultant, and thus the basis for this review.

Consultant Selection Process

The Consultant Selection Process is detailed in SCDOT's Departmental Directive 41 and describes how the consultant will be selected. As outline in the directive, a consultant firm will be selected based on the review of submitted proposals and evaluated based on weighted selection criteria. (Appendix B, Departmental Directive 41, Sect.VI, A, 2) Sections of this process are also based on Code of Federal Regulations (23 CFR 172.3). We will assume however, that Directive 41 will cover all bases with regard to the requirements of CFR 23 for the purpose of this analysis.

Several steps in this process including, but not limited to, the advertisement, the submittal of proposals and the evaluation of proposals will be outlined in the "Master Flow Chart" diagram presented in this report. As it will be evident from the flow chart, it is assumed that the process will proceed through normal circumstances and will have no reversals or stoppages based on non-agreement with the evaluation results. This will help to establish the minimum time and effort for proceeding through the process under what will be considered as normal circumstance.

Consultant Negotiations Process

The Consultant Negotiations Process is also detailed in Directive 41. The bulk of Directive 41 is dedicated to this process, which will be highlighted again in the "Master Flow Chart" diagram presented in this review. The process will describe the process of negotiating with a consultant on scope, schedule and fee. As mentioned in the description of the Consultant Selection Process, it will be assumed that there will be no reversals or stoppages based on non-agreement considering scope, schedule or fee. Although these reversals or stoppages will not be counted in the total time allocation or costs of a process, they will be considered in the analysis report for discussion purposes. It is assumed however, that there will be at least two iterations in

negotiating scope, schedule and fee, which based on interviews with SCDOT personnel is considered the normal practice.

Secondly, in defining the procurement of consultant services, it is important to identify who the players are in each process. As it has been stated previously, the most important “player” involved in this process is ultimately the traveling public. The goal is to develop a project that will be built and ultimately used by the traveling public in their daily activities. In helping to develop that project, it is especially important that resources, time and effort be used in the most efficient and prudent manner. In this regard, making sure that requesting assistance from a consultant to help expedite that project is critically important to the overall goal of constructing the project. It is therefore important to understand the “players” in selection and acquisition of consultant services who will assist in accomplishing this goal.

Below is a description of each participant that will be highlighted in these processes.

- Accounting Office - The administrative office in charge of payments made to all other entities as well as the agency payroll for all employees and for charge memorandum (form 3025A) Agency Billing m .0aintains records all vouchers, Interdepartmental Transfers, Journal Vouchers, Adjustment Vouchers, and Cash Receipts etc.
- Chief Negotiator – The Department employee in the Office of Contract Services responsible for assisting Department staff in the estimating, negotiation and record retention process covered under Directive 41.
- Commission – The administrative and governing authority of the South Carolina Department of Transportation appointed or elected in accordance with the Code of Laws of South Carolina, 1976, as amended.
- Consultant – An individual, firm, corporation, or other organization that gives professional advice or performs a professional service.
- Contract Audits Office- The office in charge of performing the Pre-award audits as described in these processes.
- Contract Manager – The Department employee responsible for the day-to-day administration and management of a consultant contract under supervision of a Director.
- Deputy Secretary for Engineering (Deputy Secretary) - The person appointed by the Secretary of Transportation in accordance with Section 57-1-450 of the Code of Laws of South Carolina, 1976, as amended, to be

the administrative head of the Department's Construction, Engineering and Planning Division.

- Director - For purposes of this evaluation, the Department employee who has been authorized by his or her Deputy Secretary to initiate requests for consultant services and who is responsible for initiating such requests. The Director appoints and supervises the Contract Manager who has the day to day responsibilities for a consultant contract.
- Director of Contract Services – The Department employee responsible for assuring compliance with the procedures and assisting Directors, or representatives, in negotiation and administration of consultant contracts. The Director of Contract Services may choose to designate a specific employee to handle the responsibilities assigned to him or her pursuant to Directive 41.
- Director of Procurement – The Department employee responsible for the procurement services (selections) covered under Directive 41. The Director of Procurement may choose to designate a specific employee to handle the responsibilities assigned to him or her pursuant to Directive 41.
- Environmental Office- The office in charge of facilitating the placement of the advertisement in South Carolina Business Opportunities (S.C.B.O.) as described in these processes.
- Federal Highway Administration (FHWA) – As used in this Directive FHWA's South Carolina Division Administrator, or his or her designee.
- Manager of Contracts and Special Projects – The Department employee in the Office of Legal Services responsible for the development of contractual documents covered under Directive 41.
- Manager of Federal Procurement – The Department employee in the Procurement Office responsible for providing administrative support for the Selection Board in the selection process.
- Secretary of Transportation - The chief administrative officer of the South Carolina Department of Transportation.
- Selection Board - A group of individuals appointed by the Secretary of Transportation to be responsible for the consultant selection process. The Selection Board is the ultimate authority for evaluating and scoring consultant proposals against the selection criteria and providing the ranking order for negotiation to the appropriate Deputy Secretary. The Selection Board has the authority to secure whatever resources necessary to assist in screening and evaluating firms including the establishment of Technical Advisory Groups.
- Team Chairperson – The Director or his/her designated representative who serves in the capacity of chairperson for the negotiation team with all assumed duties and responsibilities.
- Technical Advisory Group (TAG) - A group of knowledgeable individuals and technical experts that may be appointed by the Selection Board and whose responsibilities will be defined by the Selection Board for each separate selection.

- South Carolina Business Opportunities (S.C.B.O.) – An official South Carolina State publication. All Department requests for professional services shall appear in this publication.
(Appendix B, Departmental Directive 41, Sect. III, D)

Thirdly, it is important to define these processes in terms of their required actions, authority, man-hour usage, time constraints and who the responsible parties are in moving the processes along. **Attachment A (Request for Consultant Services – Turn-Key Task Chart)** describes in detail each task involved in the processes and highlights the before mentioned characteristics involved with each task. Also, **Attachment B (Master Flow Chart)** describes the connection and flow of all tasks associated with the processes. Finally, **Attachment C (Request of Consultant Services Turn-Key Gant Chart)** describes the timeline of a typical process based on the all assumptions discussed above. In order to simulate what really happens, the procurement of consultant services is assumed to start on the first full week in January 2009. All important calendar dates, such as holidays and Commission meetings are taken into account in order to find an accurate length of time to complete the processes. Again, it is important to note that not all tasks described in Attachment A and B are used to calculate the timeline described in Attachment C. However, the tasks labeled as “Optional” will be calculated in the analysis of processes.

IV. The Analysis

Overlap and Redundancies

In review of Attachment A and B, there does not appear to be any obvious overlap and redundancies when reviewing each process. In the Initial Commission Approval Process, TASK 3 is where the Manager of Federal Procurement reviews, processes and submits the engineering package (Package A), the Commission Agenda Transmittal Form (CAT) and the Advertisement to three different offices. While the review from the Chief Engineer is on the critical path to receiving Commission approval, the other two approvals from FHWA and the Selection Board are taking place simultaneously and do not interrupt the flow of the critical path. This demonstrates a wise use of resources and time when seeking the approvals from all three offices.

However, in review of the Consultant Selection Process, one of the first tasks of the Manager of Federal Procurement is to send the Advertisement to the Environmental Office to publish in the South Carolina Business Opportunities (SCBO), (TASK 10). If the advertisement has been prepared and approved prior to Commission Approval (TASK 7), it would seem that TASK 10 could be done by the Environmental Office in advance of its assigned placement and the advertisement could be sent out upon receiving Commission Approval. In review of TASK 10 in Attachment A and C, this may save as much as a week in calendar day knowing that the advertisement only runs on certain days of the week. It should be noted that the tasks to send the advertisement to SCBO (TASK 9-11) are not required by Directive 41 but have been developed through established process as the way to get the request for proposals advertised. It also should be noted the Selection Board can opt to choose the “optional task”, TASK 16A, when advantageous to the process. This option may prove to reduce time if the work load in reviewing the proposals is manageable.

There are several occasions when the Contract Manager gives or receives information from the consultant where the Contract Manager is simply the conduit for the flow of information. In TASKS 38 and 43B of the Consultant Negotiations Process and in TASK 59 of the Final Commission Approval Process, the Contract Manager is simply asked to relay information from other offices to the Consultant. These tasks are not required by Directive 41 but are put in place base on procedures developed within the contributing offices. According to the Attachment C, alleviating these tasks may not reduce the process time considerably, but may lessen the possibility of delay in reducing the number offices the information needs to go through. It is important to note however, that the Contract Manager will be the point of contact for the Consultant through the development of plans, and it is understandable that the Contract Manager be the entity responsible for communications with the Consultant.

Float and Lag Time

The possibilities for shortening or lengthening the Request for Consultant Services – Turn-Key are never more apparent than in the Initial and Final Commission Approval Processes. In order to comply with ACT 114, which states that the Commission must approve the request for services and the award of contracts, SCDOT has developed processes established within the SCDOT, not as a Directive, but as an established procedure. Based on the quantity and magnitude of approval requests statewide, adequate time is needed to review and approve submittals for Commission approval. This is highlighted in Attachment A in reviewing the “Required Timeframe” of several tasks from the Initial and Final Commission Approval Processes. TASKS 1, 2, 3, 4 and 5 all have specified timeframe in which to submit information. Conceivably, submittals for Commission approval for an individual project could be ready by the required timeframe of TASK 4 and 5. However, because the submittals were not ready based the

timeframe of TASK 1 or 2, the submittals never reach the Commission for approval within that month.

This is illustrated in reviewing the example request for consultant services in Attachment C- in conjunction with the information discussed above from Attachment A. The submittals were not ready for a January 14, 2009 Commission meeting based on TASK 1 being that the submittal was needed in the last week of the month prior to the Commission meeting. Based on this rule, the project did not go on the agenda for the January Commission meeting but was included in the February 18, 2009 Commission meeting. However, upon submitting the information through the steps, the submittals were indeed ready for the January Commission meeting based on TASK 5 requirements. If the project would have made the January Commission meeting, the timeframe could have been shortened by more 30 days.

Conversely, in reviewing TASK 46 of the Final Commission Approval Process, Attachment C highlights that the contract submittals were received by rule in time for the next available Commission meeting on June 18, 2009. In this situation, the submittal of the contract could have floated another day or two and still would have met the requirement for the June Commission meeting. If however, any of the tasks before TASK 46 had been delayed just a week, the contract would not have been ready for the June Commission meeting and would have had to wait 28 days until the July 16, 2009 Commission Meeting.

In review of the Consultant Selection Process, there are several tasks that are sensitive to the prior task being accomplished in timely manner. These tasks present some of the largest room for float or lag in that they are subject the availability of the personnel in charge of accomplishing the tasks. As early stated, Table A1 revealed that the Consultant Selection Process has an average amount of tasks (13 tasks) associated with its process but has the most

calendar days in accomplishing its process (56 days). TASKS 15, 17B, 18B and 20 all require meetings with SCDOT personnel to accomplishing this process. For example, although a minimum of 10 business days were given from TASK 17B to TASK 18B to occur, records reveal that up to 30 days have been given to accomplish these tasks (Appendix C, Consultant Selection Report). Conversely, records also reveal that from the time the Manager of Federal Procurement sends the Technical Advisory Group (TAG) recommendation to the Selection Board (TASK 19B) to the time the Selection Board meets to select a consultant (TASK 20), as little as 0 and up to 20 calendar days have past. In this review, the Selection Board met within five (5) business days of receiving the TAG's recommendation.

Just as sensitive to the availability of SCDOT personnel, the Consultant Negotiations Process also includes tasks of this sort. These tasks have the added dimension of relying also on the Consultant to be available in a timely manner. TASK 26B through 35B all require the coordination of personnel, internal and external, to accomplish the tasks. Not by coincidence is this process revealed to have the most tasks associated with it, 24, according to Table A-1. An example of this is illustrated by TASK 26B through 29B. TASK 26B is the start of Department personnel reviewing the scope and schedule and terminates with TASK 29B when the Negotiations Team and Consultant agree on the scope and schedule. According to Attachment C, 13 calendar days were used from TASK 26B to TASK 29B. Clearly, any delay in meeting, stalled negotiations or unavailable personnel could stretch out these proceeding and the process respectively. At the same time, proper coordination and clear communication could also result in less time between the tasks. Attachment C illustrates these time lines in both the Consultant Selection Process and the Consultant Negotiations Process. Again, it should be noted that

“optional” tasks can be employed when it is most advantageous to the process. This may require more preparation on the part of SCDOT but could yield a reduction in time.

Required By Law or Process

Table A1 illuminates the tasks required by law or process in each of the four processes that make up the Procurement for Consultant Services Turn-Key Process. This information was taken from Attachments A and B and highlighted an important note about the entire process. The task required by ACT 114 are two of the 61 tasks involved in this process. The other 59 tasks have been put in place by Departmental Directives or by established processes to accomplish the needed tasks for hiring a consultant, which includes getting Commission approval.

Table A-1 Request for Consultant Services - Task Analysis					
Process	Number of Tasks	Number of Tasks Required by ACT 114	Number of Tasks Required by Departmental Directives	Number of Tasks Required by established processes	Number of Calendar Days
Initial Commission Approval	11	1	3	7	45
Consultant Selections	13	0	9	4	56
Consultant Negotiations	24	0	19	5	41
Final Commission Approval	13	1	2	10	26
Totals	61	2	33	26	168

The highlighted items in yellow represent the high marks in each category named in the table. Out of 61 total tasks, the majority of those tasks were required by SCDOT Departmental Directives or processes established by SCDOT personnel. Only the Initial and Final Commission Approval Processes had tasks that were specifically required by ACT 114. In the Initial Commission Approval Process, only three tasks were required by a directive (TASK 1, 3A and 3B). The rest of the tasks were required by established processes. In review of Attachment

C, all of the established process tasks were accomplished on or within one day of prior task. These were also “review and approval” type processes where a signature or initialed review from the assigned office or person was given. These procedures may have been put in place as a direct result of the LAC’s previously mentioned recommendation of including “documentation of Commission approval in the selection file”. (Appendix B, LAC Report, Ch.2, Rec.7) Because they are not Departmental Directives however, they may have the most flexibility to be changed or amended.

The Consultant Negotiations Process required the greatest number of tasks and had the most tasks supported by Departmental Directives. The tasks may have less flexibility to change or amend because they would require a change in the Directive. Contract Negotiation received the most scrutiny from the LAC report mainly because of implications of paying too much for contracts. Taken from the Synopsis of the LAC Report, “SCDOT has not implemented adequate controls to ensure that preconstruction contracts are obtained at a reasonable price.” It is understandable then why this process would need more specific instructions on how to accomplish it. Departmental Directives are more specific and are related to a rule or law, which would leave less room for misinterpretation and mistakes.

Man-hour Allocation and Costs

Table A-2 describes information concerning the relative man-hour allocation and costs for each process (Attachment A). The highlighted items represent the high marks in each category named in the table; Based on previously mentioned assumptions, 61 tasks totals approximately 82 man-hours at a cost of \$6,451.00. The Consultant Negotiations Process required the most man-hours and accumulated the highest costs for all the processes. Also the

Initial and Final Commission Approval Processes required the least tasks taken, the least man-hours used and the least costs accumulated of the processes.

Table A-2 Request for Consultant Services - Cost Analysis							
Process	Number of Tasks	Number of Calendar Days	Total SCDOT Man-hours Used	* Total \$ for SCDOT Labor	Total \$ per Calendar Day	Total \$ per SCDOT Man-hour Used	Total \$ per Task
Initial Commission Approval	11	45	9.55	\$613	\$13.62	\$64.19	\$56
Consultant Selections	13	56	15.9	\$1,140	\$20.36	\$71.70	\$88
Consultant Negotiations	24	41	52.5	\$4,502	\$109.80	\$85.75	\$188
Final Commission Approval	13	26	3.75	\$196	\$7.54	\$52.27	\$15
Totals	61	168	81.7	\$6,451			

* Total \$ for SCDOT Labor is calculated by (Total Man-hours used x Number of SCDOT Employees accomplishing the task x Average Hourly Rate for SCDOT Employees used on that task)

As mentioned in the “Required by Law or Process” section of this report, it is understandable why the Consultant Negotiation Process required the most Departmental Directives. The Directives make sure the process is well documented and adequate controls are put in place. It is therefore understandable why this process requires the most man-hour allocation and incurred the most costs of the four processes. From Attachment A, TASKS 26B, 30 and 41 require the most man-hours and accumulated the most costs within the Consultant Negotiation Process. TASKS 26B and 30 are the development of the scope and schedule and the development of the fee estimate by SCDOT personnel respectively. TASK 41 is the Pre-Award Audit.

Although Table A2 describes this process as also having the highest per calendar day cost, per man-hour cost and per tasks cost, these totals should not be used to blindly associate

what any delay to the process might cost the SCDOT. The total costs are based on Total Man-hours used x Number of SCDOT Employees accomplishing the task x Average Hourly Rate for SCDOT Employees used on that task. If no man-hours are being spent during a delay, there would be no associated increase in costs to the process. However, if more man-hours are needed to work out the delay, then costs would be incurred and reference to the delay. It should also be noted that for a Consultant Contract in the range of \$500,000, \$6451 represents 1% of the total contract cost. For a construction project total \$5,000,000 for all services, the Department costs of using consultant services is 0.1% of the total cost.

V. The Results

As mentioned in section II of this report, “The History”, prior to 2007, the process of acquiring consultant services did not have the final Commission approval nor did it have the Chief Negotiator guiding the Consultant Negotiation Process. According to Contract Services reports on Consultant Contracts, from 2003 to 2007, an average of 235 calendar days was used to select a consultant (11 contracts executed). Since January of 2007, it takes an average of 327 calendar days from Commission approval to an execution of the contract, which yields an increase of approximately 90 days (6 contracts executed) from years prior to 2007. (Appendix C- Consultant Selection Chart) Without any other information to detail why some projects took longer than others to acquire consultant services, the difference in calendar days can be attributed to the changes in the processes. This is not in accord with the recommendations of the LAC report. One of the recommendations of the LAC report states, “SCDOT should shorten the time between advertising a project and signing a contract.” (Appendix A, LAC Report, Ch. 2, Rec. 5)

However, the conclusions of this review show the “possible” time allocation in calendar days under the new requirements could be 168 days. These findings are subject to the strict assumptions and minimum time constraints presented in this review. However, it can be concluded that with possible changes and prudent use of resources highlighted in Section V, “The Analysis”, the time allotted for the acquisition of Consultant Design Services may be reduced from current findings. Below is a list of “opportunities” as a result of the analysis from this review.

- Initial Commission Approval Process
 - Submittal of Commission Package be subject to most advantageous timeframe for receiving Commission approval and not just based on procedural guidelines, TASKS 1 through 5 (Possible 30 calendar days savings)
 - Develop set times for approvals required by established processes (all process highlighted in yellow on the Master Flow Chart) (Possible calendar day saving based on reducing delay)
- Consultant Selection Process
 - Arrange for SCBO Advertisement to be submitted at TASK 7 instead of TASK 10 (Possible 5 calendar days savings)
 - Develop set times for proposal reviews and selection meetings to minimize delay, TASKS 15, 17B, 18B and 20 Develop set times for approvals required by established processes
 - Employ “optional” take when advantageous, TASK 16A(Possible calendar day saving based on reducing delay)
- Consultant Negotiations Process
 - Requested contractual inform sent directly to Chief Negotiator and/or Contractor alleviating Contract Manger’s handling of documentation (Possible calendar day saving based on reducing delay)
 - Develop set times for scope, schedule and fee reviews and consultant negotiations meetings to minimize delay, TASKS 26B through 35B (Possible calendar day saving based on reducing delay)
 - Employ “optional” take when advantageous, TASK 26A, 32A and 42A, (Possible calendar day saving based on reducing delay)
- Final Commission Approval Process
 - Submittal of Commission Package be subject to most advantageous timeframe for receiving Commission approval and not just based on procedural guidelines, TASKS 46 through 52 (Possible 30 calendar days savings)

- Develop set times for approvals required by established processes
(all process highlighted in yellow on the Master Flow Chart)
(Possible calendar day saving based on reducing delay)

Although this review was structured to analyze costs of the tasks in all of the processes, results revealed that as important man-hour costs are, they are insignificant to the overall cost of consultant contract and to the project costs. However, these costs estimates did not include other possible costs such as overhead and were estimated based on minimal time spent on a task. Further evaluation of costs should be considered in evaluating the processes.

The Departmental Directives and established processes are put in place to address to the Commission Approval Processes and direct personnel on how select a consultant for design services. The most flexibility allowed in amending or changing tasks to reduce time or costs coincides with those tasks associated with established processes moreover than with what is required by ACT 114 or Departmental Directives. However, all tasks should be reviewed for possible improvement in reducing the time it takes to bring a consultant on board and for how they apply to the overall goals for which the changes to the processes were made.

Attachment A

(Request for Consultant Services – Turn-Key Task Chart)

Request for Consultant Services- Turn-Key Task Chart

Initial Commission Approval Process A

By Law- Act 114, Section 57-1-370 (E)

DD 13- Procurement of Goods, Services and Supplies; Required Commission Authorization

DD 24- Approval and Execution of Contracts and Agreements

DD 41- Professional Consultant Services - Acquisition and Administration

	Task 1	Task 2	Task 3	Task 3A	Task 3B	Task 4	Task 5
	Submittal of Engineering Package A and Commission Agenda Transmittal (Commission Package) and scope and advertisement	Director reviews and signs Commission Package, scope and advertisement	Manager of Federal Procurement distributes and submits Commission Package, Selection Evaluation Summary Criteria, scope and advertisement	FHWA reviews and approves scope and advertisement	Selection Board approves Selection Evaluation Summary Criteria, scope and advertisement	Chief Engineer reviews, signs and submits Commission Package	Deputy Secretary for Engineering reviews, signs and submits Commission Package in the form of a report to the Commission
WHO	Contract Manager	Director	Manager of Federal Procurement	FHWA Representative	Selection Board	Chief Engineer	Deputy Secretary for Engineering
TO WHOM	Director	Manager of Federal Procurement	FHWA, Chief Engineer, Selection Board	Manager of Federal Procurement	Manager of Federal Procurement	Deputy Secretary for Engineering	SCDOT Commission
REQUIRED	by Directive 41, Sect. IV	by established process	by established process	SCDOT/FHWA Stewardship and Oversight Plan (2007) and by Directive 41, Sect. VI, A, 1	by Directive 41, Sect. VI, A, 1	by established process	by established process
Required Timeframe	Submit by last week in month prior to next Commission Meeting	Submit by last week in month prior to next Commission Meeting	Submit by first week in month of Commission Meeting	Held until Commission Approves Package	Held until Commission Approves Package	Submit by first week in month of Commission Meeting	Submit one week prior to Commission Meeting in that month
Man-hours	4	0.25	1	0.5	0.5	0.25	0.5
Number of Persons Involved in Task	2	1	1	1	3	1	1
Avg Cost/Man-hour	\$40	\$57	\$40	\$0	\$50	\$63	\$75
Estimated Cost	\$320	\$14	\$40	\$0	\$75	\$16	\$38

Task 6	Task 7	Task 8	Task 9	
Secretary of Transportation reviews, signs and submits Commission Package in the form of a report to the Commission	Commission Approves request for RFP	Deputy Secretary for Engineering notifies Manager of Federal Procurement of approval to advertise	Manager of Federal Procurement receives Commission Package approval from Deputy Secretary for Engineering and receive scope and advertisement approval from FHWA and Selection Board.	
Secretary of Transportation	SCDOT Commission	Deputy Secretary for Engineering	Manager of Federal Procurement	
Deputy Secretary for Engineering	Deputy Secretary for Engineering	Manager of Federal Procurement		
by established process	by Act 114, Section 57-1-370 (E), Directive 13, 24, and 41	by established process	by Directive 41, Sect. VI, A, 1	
Submit one week prior to Commission Meeting in that month	Approval received on Commission Meeting Date of that month	Approval received on Commission Meeting Date of that month	Received and logged on same day of receipt of approval of Commission Package	
0.25	0.15	0.15	2	9.55
1	8	1	1	
\$75	\$0	\$75	\$40	
\$19	\$0	\$11	\$80	\$613 Totals

Request for Consultant Services- Turn-Key Task Chart

<div>Consultant Selection Process</div>	DD 41- Professional Consultant Services - Acquisition and Administration							
	Task 9	Task 10	Task 11	Task 12	Task 13	Task 14	Task 15	Task 16A (Optional)
	Manager of Federal Procurement receives Commission Package approval from Deputy Secretary for Engineering and receive scope and advertisement approval from FHWA and Selection Board.	Manager of Federal Procurement sends advertisement to Environmental Office to advertise project.	Environmental Office sends off advertisement and provides the Manager of Federal Procurement with the advertisement date and due date	Project Advertised in South Carolina Business Opportunities (SCBO). Manager of Federal Procurement sends copy of advertisement to appropriate contact person	Proposals Received and reviewed and processed in the Office of Procurement	Manager of Federal Procurement notifies the Selection Board of the number of proposals received and requests instructions on how to proceed. Manager of Federal Procurement prepares appropriate documentation to evaluate proposals.	Selection Board selects process for evaluating proposals and notifies Manager of Federal Procurement.	Selection Board Review Selected - Manager of Federal Procurement distributes proposals to the Selection Board and Proposal Review Meeting Established.
WHO	Manager of Federal Procurement	Manager of Federal Procurement	Environmental Office	Manager of Federal Procurement	Prospective Proposers (Consultants)	Manager of Federal Procurement	Selection Board	Manager of Federal Procurement
TO WHOM		Environmental Office	Manager of Federal Procurement	Appropriate contact persons.	Manager of Federal Procurement	Selection Board	Manager of Federal Procurement	Section Board
REQUIRED	by Directive 41, Sect. VI, A, 1	by established process	by established process	by Directive 41, Sect. VI, A, 1	by Directive 41, Sect. VI, A, 3a	by established process	by Directive 41, Sect. VI, A, 3	by Directive 41, Sect. VI, A, 3c
Required Timeframe	Received and logged on same day of receipt of approval of Commission Package	Submitted on the same day of receipt of Commission Package	Submitted by the next Tuesday after the Commission Meeting in that month	21 Days (by established process)	Received on the 21st day after published advertisement or first Monday after 21st day.	Notification occurs upon review and processing by Manager of Federal Procurement	Selection Board Review no later than 5 business day from notice of # of proposals	Minimum of 10 business days for review from date of notification
Man-hours	2	0.5	0.5	0.5	0.5	8	1	0.5
Number of Persons Involved in Task	1	1	1	1	1	1	3	1
Avg Cost/Man-hour	\$40	\$40	\$30	\$40	\$40	\$40	\$50	\$40
Estimated Cost	\$80	\$20	\$15	\$20	\$20	\$320	\$150	\$20

Task 16B	Task 17B	Task 18B	Task 19B	Task 20	Task 21	Task 22
Manager of Federal Procurement contacts members of the Technical Advisor Group (TAG) and sets up meeting to distribute proposal, review selection criteria and establishes selection process meeting.	Manager of Federal Procurement distributes proposal, reviews selection criteria with TAG and establishes proposal review meeting.	Technical Advisor Group (TAG) meets with Manager of Federal Procurement to notify Manager of collective scores.	Manager of Federal Procurement prepares memo and attachments for Selection Board review. (To Task 14A)	From Task 16A or Task 19B, Selection Board meets to select winning proposer and sends selection to Deputy Secretary of Engineer for concurrence of recommendation	Deputy Secretary for Engineering notifies Manager of Federal Procurement of concurrence with selection	Manager of Federal Procurement receives concurrence of selection from Deputy Secretary of Engineering and notifies Contract Manager and Director of Contracts Services Office by email.
Manager of Federal Procurement	Manager of Federal Procurement	TAG Members and Manager of Federal Procurement	Manager of Federal Procurement	Selection Board	Deputy Secretary for Engineering	Manager of Federal Procurement
TAG Members	TAG Members	Manager of Federal Procurement	Selection Board	Deputy Secretary for Engineering	Manager of Federal Procurement	Contract Manager and Director of Contracts Services
by Directive 41, Sect. VI, A, 3d	by Directive 41, Sect. VI, A, 3d	by Directive 41, Sect. VI, A, 3d	by established process	by Directive 41, Sect. VI, A, 3c	by Directive 41, Sect. VI, A, 3g	by Directive 41, Sect. VI, A, 3g,1
Minimum of 1 business day for meeting date of notification	Minimum of 10 business days for review from date of notification	Selection made day of TAG meeting	Memo prepare and sent to Selection Board on day of TAG Meeting.	Selection meets no later than 5 business days from receiving memo.	Concurrence submitted upon receipt and review of Selection Board selection	Email sent day of receipt of Deputy Secretary concurrence.
0.5	1	1	1	1	0.25	0.15
1	4	4	1	3	1	1
\$40	\$45	\$45	\$40	\$50	\$75	\$40
\$20	\$180	\$180	\$40	\$150	\$19	\$6
						17.9
						\$1,220
						Totals

Request for Consultant Services- Turn-Key Task Chart

	DD 41- Professional Consultant Services - Acquisition and Administration							
	<u>Consultant Negotiations Process</u>							
	Task 22	Task 23	Task 24	Task 25	Task 26A (Optional)	Task 26B	Task 27B	Task 28B
	Manager of Federal Procurement receives concurrence of selection from Deputy Secretary of Engineering and notifies Contract Manager and Director of Contracts Services Office by email.	Contract Manager sends request to establish Project Negotiations Team to the Director	Director approves request to establish negotiations team and Team Chairperson. Chief Negotiator is also a part of the team.	From Task 24 or Task 33B-4 - Team Chairperson contacts selected Consultant to establish protocol and furnish any needed project documentation	Team Chairperson reviews Scope of Services and Schedule and determines information sufficient and sends copies to Chief Negotiator and Consultant. Team Chairperson also begins Record of Negotiation	Team Chairperson develops independent Scope of Services and Schedule and requests the Consultant to develop their own Scope of Services and Schedule. Team Chairperson also begins Record of Negotiation	Team Chairperson holds internal scoping meeting to discuss Scope of Services and Schedule	Team Chairperson holds joint negotiations team/consultant meeting to discuss Scope of Services and Schedule. Team Chairperson request Consultant to resubmit to Chief Negotiator and Contract Manager
WHO	Manager of Federal Procurement	Contract Manager	Director	Team Chairperson/Contract Manager	Team Chairperson/Contract Manager	Team Chairperson/Contract Manager	Team Chairperson/Contract Manager	Team Chairperson/Contract Manager
TO WHOM	Contract Manager and Director of Contracts Services	Director	Contract Manager	Consultant	Chief Negotiator and Consultant	Consultant	Department Staff	Chief Negotiator and Consultant
REQUIRED	by Directive 41, Sect. VI, A, 3g,1	by established process	by Directive 41, Sect. VIII	by Directive 41, Sect. VIII, A, 1a	by Directive 41, Sect. VIII, A, 1b	by Directive 41, Sect. VIII, A, 1c,d	by Directive 41, Sect. VIII, A, 1c	by Directive 41, Sect. VIII, A, 1e and 2
Required Timeframe	Email sent day of receipt of Deputy Secretary concurrence.	Email sent day of receipt from Manager of Federal Procurement	Email sent day of receipt of request from Contract Manager Procurement	Email, phone conversation and or meeting held the day of receipt or next business day from approval from Director	Scope of Services and Schedule sent by email or letter the day of review.	Minimum of 1 business day used to develop Scope of Services and Schedule	Minimum of 5 business after scope is developed before meeting is held to discuss Scope of Services and Schedule	Minimum of 1 business day after scoping meeting.
Man-hours	0.15	0.1	0.1	3	1	7.5	2	1.5
Number of Persons Involved in Task	1	1	1	1	1	2	5	4
Avg Cost/Man-hour	\$40	\$40	\$57	\$40	\$40	\$40	\$40	\$40
Estimated Cost	\$6	\$4	\$6	\$120	\$40	\$600	\$400	\$240

Task 29B	Task 30	Task 31	Task 32A (Optional)	Task 32B	Task 33B	Task 34B	Task 35B	Task 34B-1 (Optional)
Consultant resubmits Scope of Services and Schedule to Chief Negotiator and Contract Manager for review and approval.	From Task 26A or Task 29B- Team Chairperson develops independent Man-Hour Requirements (MR) and Cost Estimate (CE), sends it to the Chief Negotiator and directs the consultant to prepare their MR and CE after approval of the scope and schedule.	Consultant prepares MR and CE and sends copies to the Chief Negotiator and Contract Manager for review.	Negotiations Team meets to review SCDOT and Consultant's MR and CE and determines information is sufficient and recommends the contract for approval.	Negotiations Team meets to review SCDOT and Consultant's MR and CE and determines information is not sufficient and arranges for a negotiation meeting with the Consultant.	Team Chairperson distributes the consultant's completed MR and CE to the appropriate sections within the Department for review and comparison with the Department completed MR and CE.	Team Chairperson holds joint negotiations team/consultant meeting to discuss MR and CE. Team Chairperson requests changes and asks Consultant to resubmit to Chief Negotiator and Contract Manager for approval.	Consultant sends in the amended MR and CE to Team Chairperson and Chief Negotiator for approval. Negotiations Team meets to review the Consultant's amended MR and CE and determines information is sufficient and submits contract for approval.	Team Chairperson holds joint negotiations team/consultant meeting to discuss MR and CE. Team Chairperson determines no further action will result in an acceptable agreement and terminates negotiations.
Consultant	Team Chairperson/Contract Manager	Consultant	Team Chairperson/Contract Manager	Team Chairperson/Contract Manager	Team Chairperson/Contract Manager	Team Chairperson/Contract Manager	Consultant	Team Chairperson/Contract Manager
Chief Negotiator and Contract Manger	Consultant	Chief Negotiator and Contract Manger	Chief Negotiator and Consultant	Consultant	Department Staff	Chief Negotiator and Consultant	Team Chairperson/Contract Manager	Chief Negotiator and Consultant
by Directive 41, Sect. VIII, A, 2	by Directive 41, Sect. VIII, B, 1a and Directive 41, Sect. VIII, A, 1b	by Directive 41, Sect. VIII, A, 1b and Directive 41, Sect. VIII, B	by Directive 41, Sect. VIII, B, 1b	by Directive 41, Sect. VIII, B, 1b	by Directive 41, Sect. VIII, B, 1c	by Directive 41, Sect. VIII, B, 2a	by Directive 41, Sect. VIII, B, 2a	by Directive 41, Sect. VIII, B, 2e
Submittal on the day of negotiation meeting or 1 business day after as a minimum	Email or phone call made at least one business after scope and schedule submittal.	Minimum of 1 business day for review from date of receipt	Minimum of 1 business day after Consultant submittal of MR and CE.	Minimum of 1 business day after Negotiations Team meets to discuss MR and CE.	MR and CE are distributed to Department staff for review on or one business day after Negotiations Team meets.	Minimum of 1 business day after Department internal review meeting.	Meeting held on day of submittal or at least one day after submittal.	Minimum of 1 business day after Department internal review meeting.
1	2,3	0.1	3	3	1	2	1	2
2	8	1	3	3	7	2	2	2
\$40	\$35	\$40	\$40	\$40	\$35	\$40	\$40	\$40
\$80	\$644	\$4	\$360	\$360	\$245	\$160	\$80	\$160

Task 354B-2 (Optional)	Task 34B-3 (Optional)	Task 34B-4 (Optional)	Task 36	Task 37	Task 38	Task 39	Task 40	Task 41
Chief Negotiator notifies Director of Contract Services in writing reasons for termination.	Director of Contract Services notifies Consultant in a letter termination of negotiations. Copy of letter is sent to Deputy Secretary of Engineering, Director, Selection Board, Director of Procurement, Team Chairperson/Contract Manager and Chief Negotiator.	Director of Contract Services notifies Negotiation Team to begin negotiations with next ranking consultant. (Starts back at Task 25)	From Task 32A or Task 35B - Contract Manager notifies the Manager of Contracts and Special Projects and Legal Office of agreement.	Manager of Contracts and Special Projects and Legal Office prepares draft contract for Consultant to sign and submits documentation to the Contract Manager.	Contract Manager sends draft contract to Consultant	Consultant signs the agreement and sends three (3) copies to the Chief Negotiator	Chief Negotiator submits contract to for Pre-Award Audit	Contract Audits Office Submits Pre-Award audit results
Chief Negotiator	Director of Contract Services	Director of Contract Services	Contracts Manager	Manager of Contracts and Special Projects	Contract Manager	Consultant	Chief Negotiator	Contract Audits Office
Director of Contract Services	Consultant, Deputy Secretary of Engineering, Director, Selection Board, Director of Procurement, Team Chairperson/Contract Manager and Chief Negotiator.	Negotiation Team	Manager of Contracts and Special Projects	Contract Manager	Consultant	Chief Negotiator and Contract Manager	Contract Audits Office	Director of Contract Services
by Directive 41, Sect. VIII, B, 2e	by Directive 41, Sect. VIII, B, 2e	by Directive 41, Sect. VIII, B, 2e	By established process	by Directive 41, Sect. VIII, B, 2d	by established process	by Directive 41, Sect. IX, D, 4	by Directive 41, Sect. X	by Directive 41, Sect. X, 2d
Notification sent on day of negotiations termination action.	Letter sent same day or at least one day after negotiations termination notification from Chief Negotiator.	Email notification sent same day of negotiations termination letter distribution.	Email notification sent same day of approval of negotiations.	Sent at least five business days after notification of approval.	Sent on day of receipt of draft contract	Sent at least one business days after receiving draft contract	Submitted on same day of receiving signed agreement.	Submitted at lease five business days after receiving pre-award audit packet.
0.25	0.5	0.5	0.25	1	0.5	0	0.15	20
1	1	1	1	1	1	0	1	2
\$32	\$38	\$38	\$40	\$45	\$40	\$0	\$32	\$30
\$8	\$19	\$19	\$10	\$45	\$20	\$0	\$5	\$1,200

Task 42A (Optional)	TASK 42B	Task 43B	Task 44B	Task 45	Task 46	
Chief Negotiator notifies Contract Manager of Results of Audit. Chief Negotiator returns signed contract for approval	Chief Negotiator notifies Contract Manager of Results of Audit. Chief Negotiator asks for clarification from audit results.	Contract Manager receives audit results and asks Consultant for changes or clarification to contract.	Consultant submits contract based on audit results to Contract Manager	From Task 42A or Task 44B - Contract Manager completes Record of Negotiations and Commission Agenda Transmittal Form for submission	Submittal of Contract Record of Negotiation (RON) and Commission Agenda Transmittal (CAT) Form	
Director of Contract Services	Director of Contract Services	Contract Manager	Consultant	Contract Manager	Contract Manager	
Contract Manager	Contract Manager	Consultant	Contract Manager	by Directive 41, Sect. X	Director	
by Directive 41, Sect. X, D	by Directive 41, Sect. X, D	by established process	by established process	by Directive 41, Sect. VIII, B,2f	by Directive 41, Section IV, Paragraph 2	
Performed on day or receipt from Internal Audit Office	Performed on day of receipt from Internal Audit Office	Performed on day of receipt of audit results	Performed on or at least one business day after receiving audit results	Performed on day of receiving newly signed contract	Submit no later than last working day in month prior to the month of Commission Meeting	
0.15	0.5	0.5	0	4	1	52.65
1	1	1	0	1	2	
\$38	\$38	\$40	\$0	\$40	\$40	
\$6	\$19	\$20	\$0	\$160	\$80	\$4,508
						Totals

Request for Consultant Services- Turn-Key Task Chart

Final Commission Approval Process B

By Law- Act 114, Section 57-1-370 (E)

DD 13- Procurement of Goods, Services and Supplies; Required Commission Authorization

DD 24- Approval and Execution of Contracts and Agreements

DD 41- Professional Consultant Services - Acquisition and Administration

	Task 46	Task 47	Task 48	Task 49	Task 50	Task 51	Task 52	Task 53
	Submittal of Contract Record of Negotiation (RON) and Commission Agenda Transmittal (CAT) Form	Director reviews and submits Contract, RON and CAT	Contract Services receives, reviews and submits Contract, Ron and CAT	Director of Contracts and Special Projects reviews and submits Contract, RON and CAT	Chief Engineer receives, reviews and submits Contract and Commission Agenda Transmittal Form	Deputy Secretary for Engineering receives, reviews and submits Contract and Commission Agenda Transmittal Form	Secretary of Transportation reviews and signs Commission Agenda Transmittal Form	Commission Approves Contract
WHO	Contract Manager	Director	Office of Contract Services	Director of Contracts and Special Projects	Chief Engineer	Deputy Secretary for Engineering	Secretary of Transportation	SCDOT Commission
TO WHOM	Director	Office of Contract Services	Director of Contracts and Special Projects	Chief Engineer	Deputy Secretary for Engineering	SCDOT Commission	Deputy Secretary for Engineering	Deputy Secretary for Engineering
REQUIRED	by Directive 41, Section IV, Paragraph 2	by established process	by established process	by established process	by established process	by Directive 41, Sect. XVI, C	by established process	by Act 114, Section 57-1-370 (E), Directives 13, 24 and 41
Required Timeframe	Submit no later than last working day in month prior to the month of Commission Meeting	Submit no later than third working day in month of Commission Meeting	Submit no later than forth working day in month of Commission Meeting	Submit no later than fifth working day in month of Commission Meeting	Submit no later than seventh working day in month of Commission Meeting	Submit one week prior to Commission Meeting in that month	Signing occurs one week prior to Commission Meeting in that month	Approval received on Commission Meeting Date of that month
Man-hours	1	0.25	0.5	0.25	0.25	0.5	0.15	0.15
Number of Persons Involved in Task	2	1	2	1	1	1	1	8
Avg Cost/Man-hour	\$40	\$57	\$35	\$45	\$63	\$75	\$75	\$0
Estimated Cost	\$80	\$14	\$35	\$11	\$16	\$38	\$11	\$0

Task 54	Task 55	Task 56	Task 57	Task 58	Task 59
Deputy Secretary for Engineering signs contract and notifies Director of Contracts and Special Projects of approval	Director of Contracts and Special Projects sends contract to Contract Services Office for processing	Contract Services Office request contract number from Accounting Office	Accounting Office sends contract number to Contract Services Offices to complete contract execution	Contract Services Offices executes contract and sends contract to Contract Manager to distribute	Contract Manager issues Notice to Proceed to Consultant
Deputy Secretary for Engineering	Director of Contracts and Special Projects	Contract Services Offices	Accounting Office	Manager of Federal Procurement	Contract Manager
Director of Contracts and Special Projects	Contract Services Offices	Accounting Office	Contract Services Offices	Contract Manager	Consultant
Directive 24, Sect. 1	by established process	by established process	by established process	by established process	by established process
Approval received on Commission Meeting Date of that month	Contract received on Commission Meeting Date of that month	Contract number received on Commission Meeting Date of that month	Contract number received on Commission Meeting Date of that month	Contract is executed at least one working day after Commission Meeting Date of that month	Notice to Proceed issued on day of or at least one day after execution of contract.
0.15	0.25	0.15	0.15	0.5	0.5
1	1	1	1	1	1
\$75	\$45	\$38	\$25	\$38	\$40
\$11	\$11	\$6	\$4	\$19	\$20

4.75

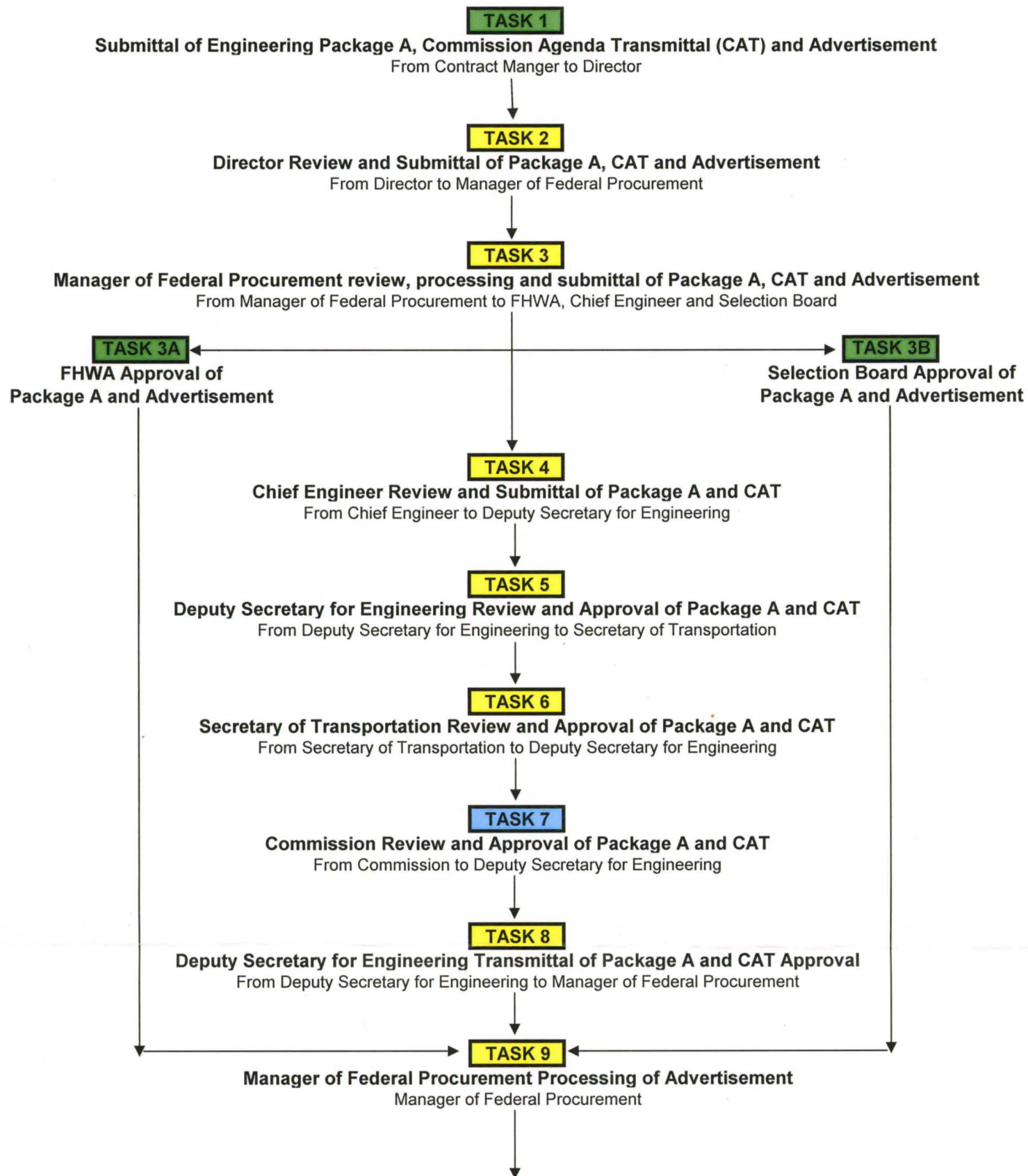
\$276
Totals

Attachment B

(Master Flow Chart)

Master Flow Chart
Attachment B

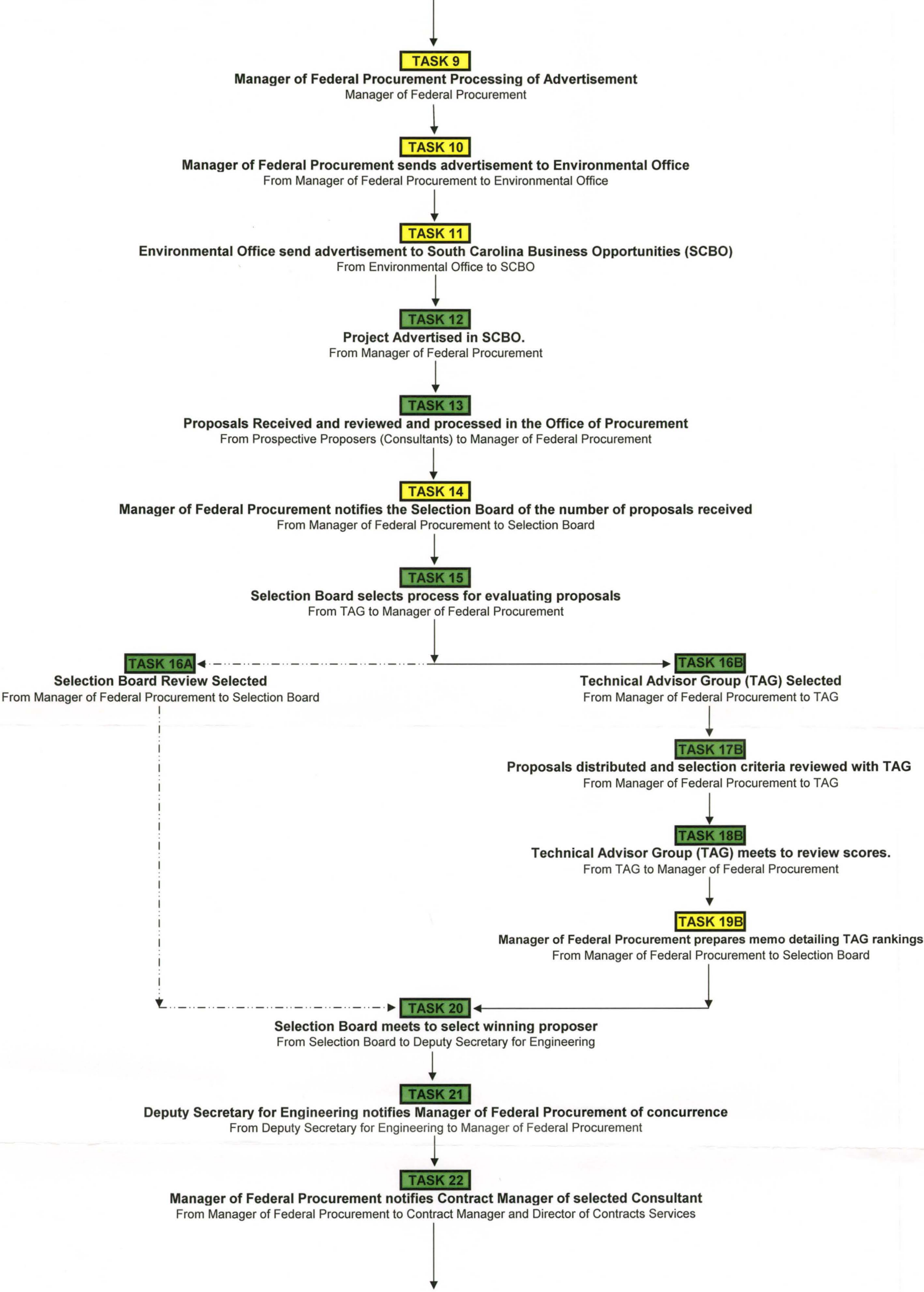
Initial Commission Approval Process







- = ACT 114 REQUIRED
- = SCDOT Departmental Directive(s) REQUIRED
- = SCDOT Established Process REQUIRED
- = Optional Path (not calculated for total manhours and costs)

Master Flow Chart
Attachment B

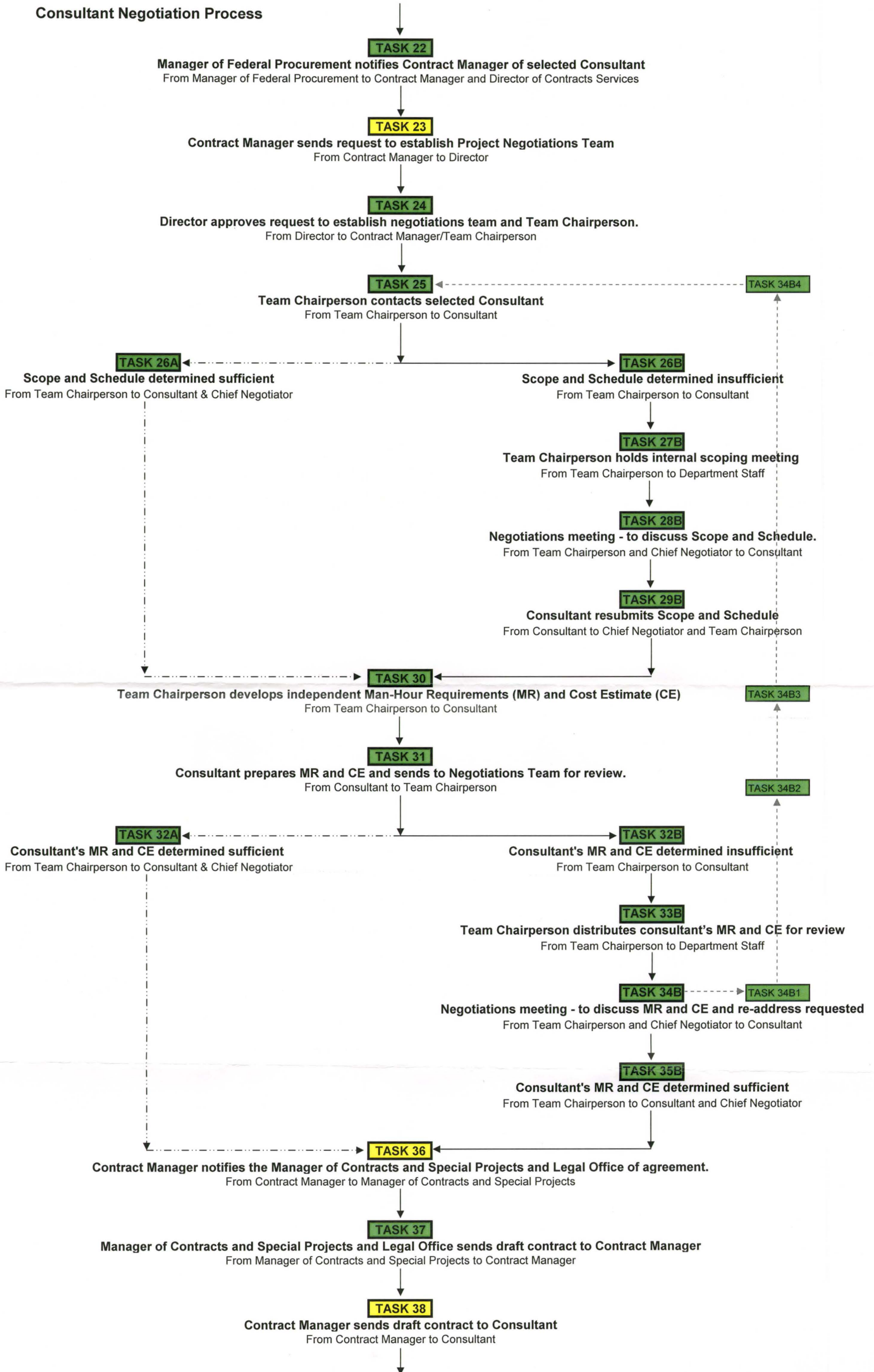
Consultant Selection Process



-  = ACT 114 REQUIRED
-  = SCDOT Departmental Directive(s) REQUIRED
-  = SCDOT Established Process REQUIRED
-  = Optional Path (not calculated for total manhours and costs)

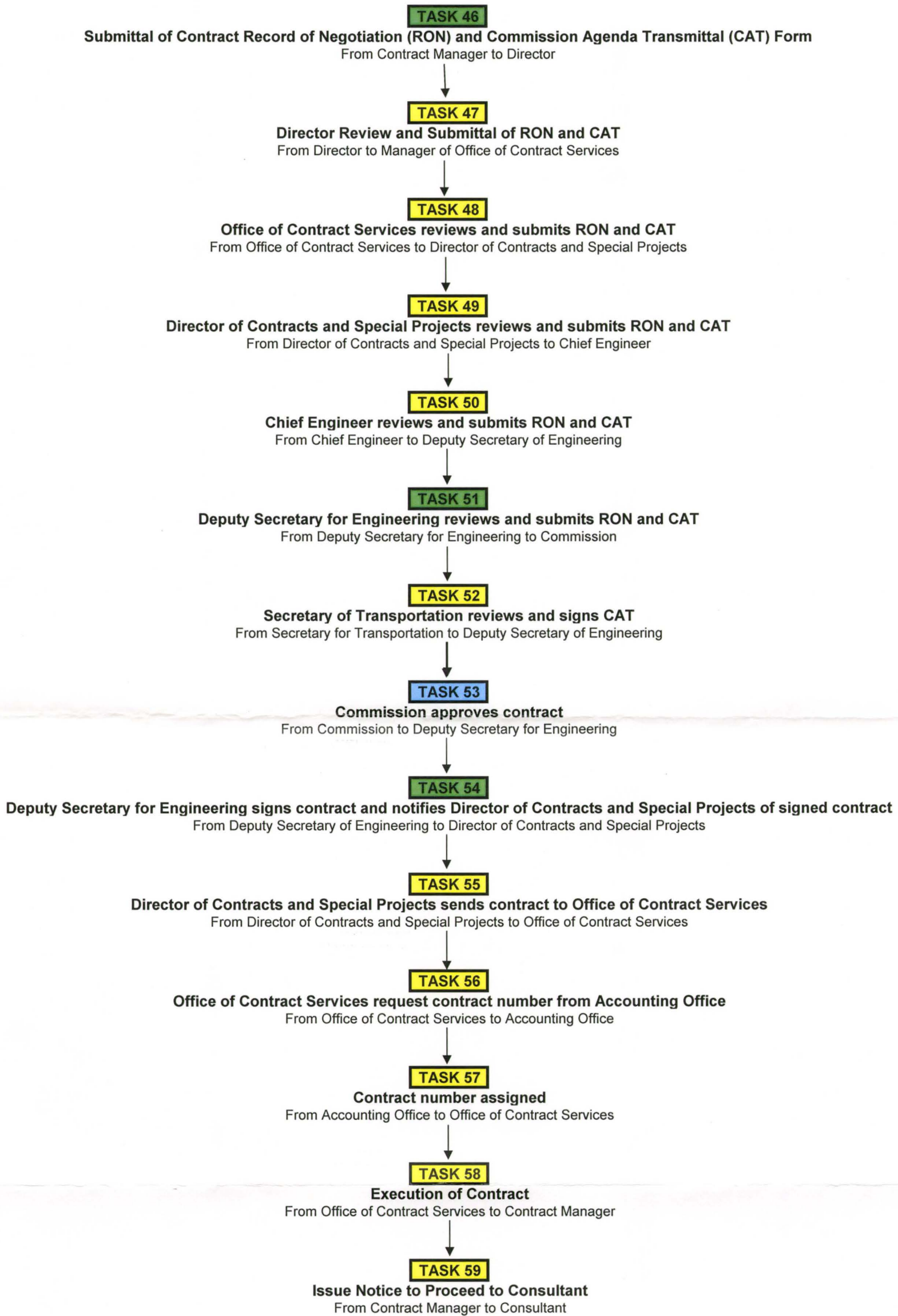
**Master Flow Chart
Attachment B**





Consultant Negotiation Process



Master Flow Chart Attachment B

Final Commission Approval Process



- | | | |
|---|---|---|
|  | = | ACT 114 REQUIRED |
|  | = | SCDOT Departmental Directive(s) REQUIRED |
|  | = | SCDOT Established Process REQUIRED |
|  | = | Optional Path (not calculated for total manhours and costs) |

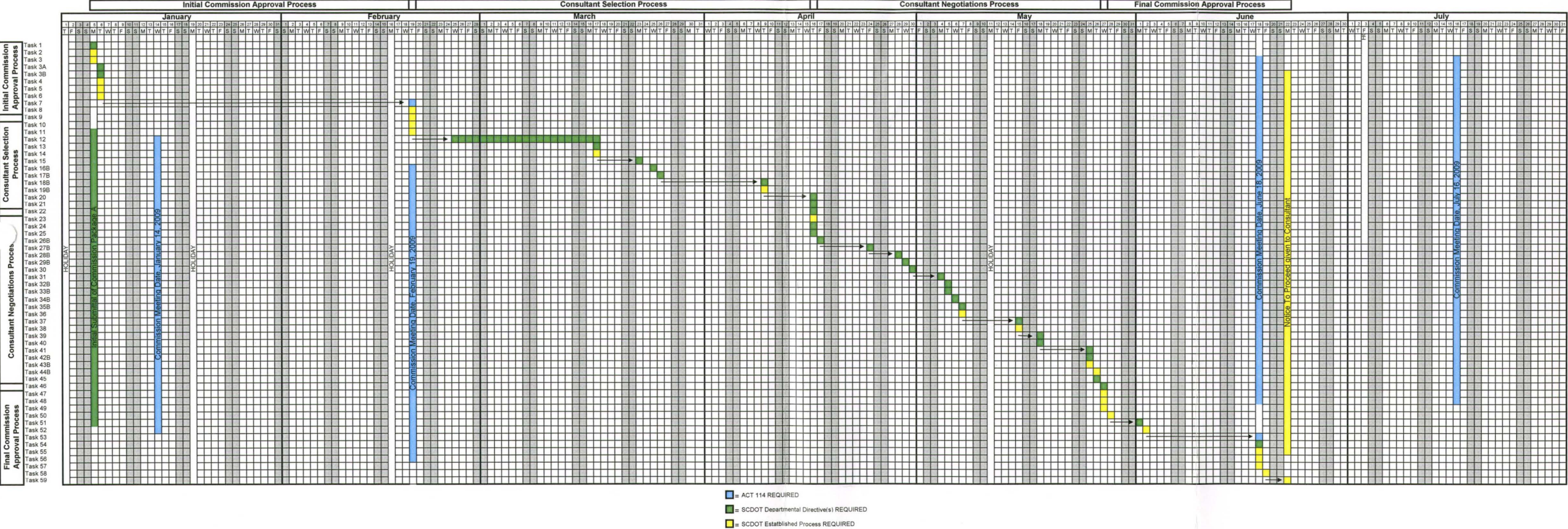
Attachment C

(Request for Consultant Services – Turn-Key Gant Chart)

Attachment C

Request for Consultant Services- Turn-Key

Gant Chart



Appendix A

LAC Report

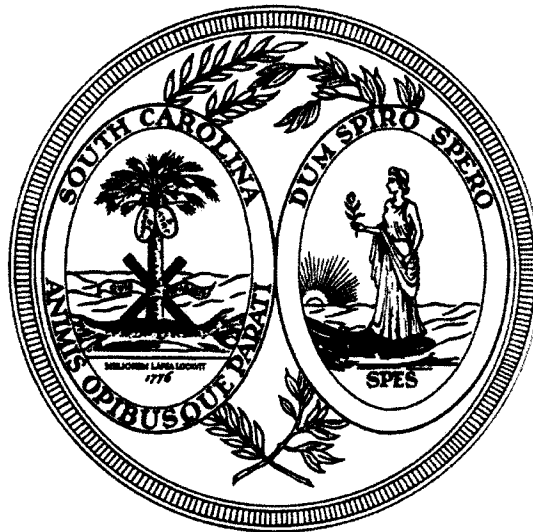


SOUTH CAROLINA GENERAL ASSEMBLY

Legislative Audit Council

November 2006

A MANAGEMENT REVIEW OF THE SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION



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Authorized by §2-15-10 *et seq.* of the South Carolina Code of Laws, the Legislative Audit Council, created in 1975, reviews the operations of state agencies, investigates fiscal matters as required, and provides information to assist the General Assembly. Some audits are conducted at the request of groups of legislators who have questions about potential problems in state agencies or programs; other audits are performed as a result of statutory mandate.

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LAC.SC.GOV

A Management Review of the South Carolina Department of Transportation
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Legislative Audit Council

A MANAGEMENT REVIEW OF THE SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

Contents

Synopsis

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Chapter 1 Introduction and SCDOT's Funding

Audit Objectives	1
Audit Scope and Methodology	1
Background	3
SCDOT's Funding	4

Chapter 2 Contract Management

Contracts for Construction and Resource Management (CRM)	9
Preconstruction Contracts	17
Audits of Preconstruction Contracts	23
SCDOT's Contracts With an Engineering Consulting Firm	27
Construction Contracts	33
Contract With CPA Firm	36

Chapter 3 Program Management

Federal Billings Held	39
Environmental Issues	43
SCDOT Planning	47
Performance Measures	49

Chapter 4 Administrative Management

Building Renovations	53
Conferences and Travel	55
Fleet Management	58
Concerns About Favoritism	61
Long-Term Temporary Employees	65
Internal Audit	66
Administrative Cost Savings	67

Contents

Appendix

Agency Comments	69
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Synopsis

Members of the General Assembly asked the Legislative Audit Council to conduct an audit of the South Carolina Department of Transportation (SCDOT). Our audit focused on how SCDOT has managed its resources. Because the department has limited resources to construct and maintain the state's roads and bridges, it is important for SCDOT management to carefully control agency expenditures to minimize waste and maximize cost-effectiveness.

We found that SCDOT did not always control expenditures in the areas we reviewed, particularly consultant contracts. Also, management did not always maximize available resources. However, SCDOT has taken appropriate action to control costs in construction contracts and some administrative areas. Our findings are summarized below.

Contract Management

We reviewed two ongoing SCDOT contracts with private firms for construction and resource management (CRM). As of April 2006, SCDOT had spent approximately \$253 million for these contracts to manage construction projects. We found that the CRM contracts did not adequately protect the state's interest and resulted in wasted funds.

- The contracts provided for fixed payments prior to work being completed. Having fixed fees for program and financial management resulted in the contractors being paid approximately \$8.7 million for projects that were eliminated from the contracts.
- The contracts' program and financial management fees were set too high. If the contracts had provided for program/financial management fees of 2%, as proposed by one of the contractors, instead of 4.5%, SCDOT and the state would have saved approximately \$32 million that could have been used for other projects.
- Although the CRM contractors were to manage their assigned projects, SCDOT incurred substantial internal charges in overseeing the contractors' work. This increased the cost of 39 of the 84 projects they were responsible for managing by approximately \$15 million.
- The CRM performance in managing construction contracts was no better than that of SCDOT managers. The projects managed by the CRM contractors were 7% more over budget than those managed by SCDOT.

SCDOT frequently contracts with consultants for preconstruction activities, including road and bridge design, environmental assessments, and obtaining right-of-way. We identified several problems with cost controls over the preconstruction process.

- SCDOT's procurements of preconstruction contracts do not always ensure the most qualified contractor receives the job. In half of the selections we reviewed, SCDOT selected firms that did not receive the highest scores based on the written criteria.
- SCDOT has not implemented adequate controls to ensure that preconstruction contracts are obtained at a reasonable price. Once a qualified firm has been selected, SCDOT is required by federal regulations to negotiate the price. We found no evidence documenting how SCDOT negotiated the price of the contract in 25% of the consultant contracts we reviewed.
- Federal regulations require agencies to prepare an independent cost estimate to evaluate the price proposed by the consultant. For half of the contracts we reviewed, there was no evidence of an independent estimate prepared by SCDOT. For contracts where SCDOT prepared an estimate, the costs were reduced an additional three percentage points from those where there was no evidence of an SCDOT estimate.
- SCDOT's audit program for preconstruction contracts is inadequate, ineffective, and not in compliance with federal law. SCDOT does not comply with federal law in verifying contractors' overhead rates.

We identified several problems with SCDOT's consulting contracts with one firm that was paid \$2.6 million in FY 04-05 and FY 05-06 for four contracts that we reviewed. There were problems with the noncompetitive selection of the firm, the vague terms and scope of services in the contracts, and billings and payment for services. SCDOT paid approximately twice as much as necessary to hire temporary employees, mostly former SCDOT employees, through this firm. Also, SCDOT paid more than \$121,000 to another firm for business advisory services without competitively procuring these services as required by the state procurement code.

In 2004 and 2005, SCDOT awarded approximately \$1.4 billion in construction contracts by a competitive bidding process. We reviewed SCDOT's management of construction contracts and did not identify significant problems.

- SCDOT had implemented recommendations from our 2001 audit of road paving contracts. For example, the agency uses bid analysis software to improve its capacity to identify problems with bids.
- SCDOT's use of partnering, a formal collaboration between the contractor and SCDOT, has improved its ability to complete projects within budget and on time. SCDOT calculated a cumulative \$17 million in savings for partnering as of March 2006.

Program Management

We reviewed SCDOT's management of its programs to construct and maintain the state's roads and bridges and identified problems relating to resource management.

- We found evidence to support allegations that SCDOT attempted to lower its cash balances during the legislative session by delaying billings for reimbursements from the Federal Highway Administration (FHWA). Deferred billings in FY 03-04 and FY 04-05 may have cost the agency more than \$1.5 million in lost interest.
- SCDOT spent over \$3 million to address several environmental violations. From 1992 to 2005, SCDOT paid penalties totaling \$163,880. Also, in 2002, the federal Environmental Protection Agency required SCDOT to undertake a \$2.9 million supplemental environmental project as part of sanctions stemming from six actions against the agency.
- We examined SCDOT planning procedures for building and maintaining roads to determine if the process adequately prioritized projects. We found that SCDOT complies with federal regulations and generally has appropriate processes in place for planning construction and maintenance projects statewide.
- We found that SCDOT has an ongoing strategic plan and has regularly measured many of its actions. However, SCDOT has reported comparative data that is not valid and the agency has not adequately published the extent to which it is achieving its goals.

Administrative Management

During the period FY 02-03 through FY 04-05, we found that SCDOT took steps to reduce its administrative costs. However, we also identified areas of noncompliance with state law and suggestions for further reductions.

- We reviewed SCDOT's headquarters renovations and found that the agency had not complied with requirements for oversight of capital improvements by the Joint Bond Review Committee (JBRC). Five projects were not initially submitted to the JBRC as required.
- Our review of SCDOT's expenditures for conferences identified issues relating to conference finances. SCDOT's report of expenditures for a 2004 conference did not fully disclose event costs. In violation of state law, SCDOT used private checking accounts from a credit union to handle registration fees and sponsor contributions for two conferences. Also, SCDOT has solicited contributions from its contractors to support conference activities. This creates a conflict of interest.
- In 2005, SCDOT initiated new procedures for planning agency conferences and events that have resulted in lower costs. However, additional cost savings could be realized from having conferences at a central location.
- Our review of SCDOT's management of its passenger vehicle fleet did not reveal significant problems. In 2005, SCDOT made changes to improve compliance with legal requirements for commuting reimbursements and increase efficiency. The agency reduced the number of permanently assigned vehicles.
- Some aspects of SCDOT's management of temporary employees and the executive director's interns have created the appearance that SCDOT management showed favoritism in dealing with employees. SCDOT could take steps to ensure that its employment decisions are well justified and documented. Also, by employing long-term temporary employees, SCDOT has not complied with state law.
- SCDOT's internal audit department does not report to the appropriate officials to provide adequate independence for the audit function. The activities of the internal audit department are not reported to the commission on a regular basis, and the commission does not have a standing audit committee.
- SCDOT could save by implementing the recommendations of a 2005 internal committee report. The agency could achieve savings by deactivating unnecessary pagers and eliminating the practice of issuing more than one computer to individual employees.

Introduction and SCDOT's Funding

Audit Objectives

Members of the General Assembly asked the Legislative Audit Council to conduct an audit of the South Carolina Department of Transportation (SCDOT). The requesters' concerns focused on how SCDOT has managed its resources. Our objectives listed below primarily relate to the efficiency and accountability of expenditures for the roads and bridges that comprise the state's highway system.

- Review SCDOT's sources and uses of funds to determine whether it has maximized its resources and planned adequately for future needs.
- Review SCDOT's management of its contracts for designing, building, and maintaining roads and bridges to determine whether cost and accountability controls are adequate.
- Review SCDOT's planning for building and maintaining roads and bridges to determine whether the process is adequate to ensure appropriate priorities.
- Review SCDOT's methods for measuring and reporting on its performance to determine whether measures are appropriate and data is reliable.
- Review SCDOT's administrative expenditures to determine whether there are opportunities for cost savings or more efficient use of resources.
- Review SCDOT's human resources management to determine compliance, efficiency, and effectiveness.

Audit Scope and Methodology

We reviewed the operations of the South Carolina Department of Transportation with primary emphasis on SCDOT's contracting and other issues relating to SCDOT's mission of building and maintaining roads and bridges. We also reviewed agencywide administrative issues. We focused on specific issues related to our objectives; for example, we did not review SCDOT's mass transit responsibilities. The period of our review was generally FY 02-03 through FY 04-05, with earlier periods where relevant, such as contracts from earlier periods that are still ongoing, environmental issues, and issues related to the agency's planning.

To conduct the audit, we used a variety of sources of evidence including those listed below.

- SCDOT accounting and personnel records.
- SCDOT contract records.
- SCDOT vehicle records.
- SCDOT management policies and procedures.
- Federal law and criteria for procuring highway contractors and funding highway projects.
- Records from the State Infrastructure Bank.
- Interviews with SCDOT employees, employees of other state, local, and federal agencies, and private individuals.
- Prior audits and consultant reports concerning SCDOT.
- Reports and manuals published by SCDOT.
- Reports and information concerning transportation agencies in other states.

Criteria used to measure performance included state and federal laws and regulations, agency policy, the practice of other states, and principles of good business practice and financial management. We used several nonstatistical samples, which are described in the audit report. We reviewed internal controls in several areas including SCDOT's accounting records, procurement, capital improvements, contract management, and human resources management. Our findings are detailed in the report.

This audit was conducted in accordance with generally accepted government auditing standards.

Use of Automated Information

SCDOT has multiple automated information systems. In addition to its accounting system (including billing and budgeting), the agency has computer information systems that include those for construction contract management, bidding and estimating, maintenance management, pavement management, fleet management, and right-of-way acquisition. It also has small systems designed for particular purposes such as preconstruction contract management or tracking basic information on construction contracts. Some of the information systems are standard systems such as those developed under the auspices of the American Association of State Highway and Transportation Officials (AASHTO), while others are in-house, including those developed and maintained by a few employees. Throughout SCDOT, individual employees manually input information and produce reports for particular purposes.

Based on our survey work, we did not have major concerns about a lack of internal controls over SCDOT's financial transactions. However, during the course of our work, we did use information from several of the information systems discussed above. We could not audit or verify all of the information obtained from these multiple systems, and we acknowledge that it may be unreliable. However, we critically analyzed the information we received, and compared it with other sources and known evidence. In one case, where we could not obtain reliable information, we did not use the information for audit conclusions (see p. 16). With the exception of information from SCDOT's financial audit, readers of the report should assume that amounts and numbers used in this report describing SCDOT's activities are attributed to SCDOT and are not audited figures. Overall, the use of unverified data was not central to our audit objectives, and we believe that the findings and conclusions in this report are valid.

Background

The South Carolina Department of Transportation (SCDOT) is responsible for planning, constructing, maintaining, and operating the state highway system and providing mass transit services. Its mission is to provide a safe and efficient transportation system for the state.

SCDOT is one of the largest state agencies with a staff of approximately 5,000 employees. The central headquarters for the agency is in Columbia. SCDOT also has 7 district offices and its employees work in each of the state's 46 counties.

The seven-member South Carolina Department of Transportation Commission governs the agency. The chair of the commission is appointed by the Governor with the advice and consent of the Senate. The other six members are elected by the legislative delegation in each of the state's congressional districts. The commissioners serve four-year terms. The commission appoints the executive director, who carries out the daily operations of the agency.

South Carolina currently has approximately 42,000 miles of road in the state system, the fourth-largest system in the United States. This includes about 17,000 miles of primary roads including interstates, and 25,000 miles of two-lane secondary roads. The state has approximately 8,300 state-owned bridges.

SCDOT's Funding

We were asked to provide an explanation of SCDOT's revenues and expenditures for the past three fiscal years. This section discusses the federal and state sources of funding for SCDOT and the amounts spent on building and maintaining roads. We also discuss the agency's concerns over its cash resources and its financial forecast.

Revenues and Expenditures

SCDOT's revenues for FY 04-05 were more than \$1.39 billion. The primary source of revenue is reimbursements from the federal-aid highway program of the Federal Highway Administration (FHWA) for construction of roads and bridges. SCDOT also receives revenues from the state motor fuel user fee (gas tax). SCDOT expends the majority of its revenues for building and maintaining the state's highway system. SCDOT spent over \$1.2 billion during FY 04-05 on building roads and bridges, highway maintenance, paying debt service, and general administration of the agency. Table 1.1 shows SCDOT's revenues and expenditures for FY 02-03 through FY 04-05.

Table 1.1: SCDOT Revenues and Expenditures

	FY 02-03	FY 03-04	FY 04-05
REVENUES			
Federal-aid Highway Program Funds	\$431,886,481	\$ 568,364,624	\$ 718,989,191
Taxes, Fees (primarily gasoline taxes)	458,768,249	488,582,384	497,392,253
Proceeds from Issuing Bonds	409,284	2,205,512	140,042,340
Participation Agreements, Other	42,649,592	28,043,344	29,044,964
Interest, Investment Income	8,200,916	777,669	8,384,827
State Appropriations	444,268	990	100,990
TOTAL Revenues	\$942,358,790	\$1,087,974,523	\$1,393,954,565
EXPENDITURES			
<i>Current:</i> Highway Maintenance	\$ 383,258,698	\$ 417,056,262	\$ 468,336,402
General Admin., Engineering, Mass Transit, Toll Facilities	80,348,484	91,758,651	102,817,742
<i>Capital Outlay:</i> Infrastructure - Road and Bridge Network	355,461,405	390,230,651	484,539,893
Land (including Right-of-Way), Equip. & Furniture, Vehicles	87,881,778	73,090,558	45,774,608
<i>Debt Service:</i> Principal	43,514,024	46,618,886	48,348,162
Interest, Other	36,106,382	33,082,654	32,847,337
<i>Allocations to other Entities:</i> State Infrastructure Bank*	22,984,451	24,372,008	24,356,765
Agency Fund - County Transportation Program	70,237,459	75,327,735	73,390,424
Remitted to Gen. Fund for Statewide Cost Allocation Plan	4,940,198	4,940,634	4,940,205
TOTAL Expenditures	\$1,084,732,879	\$1,156,478,039	\$1,285,351,538
Excess of Revenues Over (Under) Expenditures	(\$142,374,089)	(\$68,503,516)	\$108,603,027

* SCDOT is required by law to remit 1¢ of the gasoline tax to the State Infrastructure Bank (SIB), a sister state agency established to finance major transportation projects.

Source: SCDOT audited financial statements.

Federal Funding for Highway Construction

The federal funding that South Carolina receives from the FHWA federal-aid highway program is generated from a fuel tax (18¢ per gallon) imposed by the federal government. These funds are collected in each state and are annually redistributed to each state by Congressional appropriation. South Carolina is a donor state, meaning that it contributes more federal taxes than it receives. Federal dollars are primarily used for construction and generally cannot be used for maintenance. South Carolina relies on federal money to fund its construction program since it does not receive general fund appropriations for construction. Of 12 states in the southeast, only 3, including South Carolina, use no general fund revenues to fund highways.

SCDOT received appropriations of federal funds as shown in Table 1.2. Congressional earmarks are funds that must be set aside for specific projects mandated by Congress. SCDOT officials noted that federal earmarks have increased significantly, leaving fewer resources for projects resulting from the state's highway planning process. As shown in the table, these earmarks have grown from \$27 million in 2004 to over \$81 million in 2006.

Table 1.2: S.C. Appropriations from FHWA for FFY 2004 Through FFY 2006

FEDERAL FISCAL YEAR	TOTAL APPROPRIATED	CONGRESSIONAL EARMARKS	AVAILABLE FUNDING FOR SCDOT PROJECTS
	(IN MILLIONS)		
2004	\$482.0	\$27.0	\$455.0
2005	\$540.7	\$65.3	\$475.4
2006	\$520.6	\$81.4	\$439.2

Source: SCDOT

Under the federal-aid highway program, each state is required to match federal highway funds with state or local funds. The match ratio is usually 80% federal funds and 20% state funds. Under this program, SCDOT pays the entire cost and is reimbursed 80%. According to SCDOT, only about 40% of the state's highway system is eligible for federal highway funds. Therefore, the remaining 60% of the state's roads must be maintained and improved solely with state funds.

As federal dollars have grown in recent years, so has the state's required match of these funds. As more state funds, primarily for maintenance, are used to match construction projects in the federal programs, SCDOT has been forced to reduce maintenance activities.

State Funding for Highway Maintenance

Funding for highway maintenance has been an area of concern. SCDOT receives revenues from the state motor fuel user fee of 16¢ per gallon. However, SCDOT does not receive the entire amount collected since portions of this fee are earmarked for county transportation funding, economic development, and watercraft funding through the Department of Natural Resources. The motor fuel user fee has not been increased or adjusted for inflation since 1987 and is among the lowest in the nation. Since this is a fee per gallon, it does not increase as the price of fuel increases. In order to increase revenues from the gas tax, more cars must use more gallons of fuel. Increases in the number of cars and miles driven put a greater strain on the road system, requiring more maintenance and construction. According to the SCDOT's annual accountability report for FY 04-05, the shortfall of funds for necessary highway maintenance is \$567 million per year.

When state funds are used to match federal construction funds, the amount available for maintenance decreases. During the 2005 legislative session, the General Assembly passed Act 176 aimed at increasing funding to SCDOT for road maintenance. This bill did not raise or lower any current user fees or taxes, but instead reallocated revenue to SCDOT. This revenue is generated from driver's license fees and other fees that were previously dedicated to the general fund or other state agencies. SCDOT estimates that it will receive \$11.5 million from this reallocation during FY 05-06 and \$26.6 million during FY 06-07.

Expenditures for Road and Bridge Construction

We were requested to provide information about the amount of funds spent on building primary and secondary roads and associated maintenance budgets. SCDOT provided this information as shown in Table 1.3.

Table 1.3: Construction and Maintenance Expenditures

	FY 02-03	FY 03-04	FY 04-05
CONSTRUCTION			
Highway Construction	\$658,119,275	\$681,283,177	\$755,727,441
Other	11,717	149,152	1,005
TOTAL Construction	<u>\$658,130,992</u>	<u>\$681,432,329</u>	<u>\$755,728,446</u>
MAINTENANCE			
Highway Maintenance	\$186,111,307	\$193,496,524	\$222,156,810
Pavement Preservation and Special Projects	58,341	19,607,569	53,325,732
County Transportation Program	38,441,666	31,693,944	42,064,730
TOTAL Maintenance	<u>\$224,611,314</u>	<u>\$244,798,037</u>	<u>\$317,547,272</u>

Due to adjustments made during the annual audit process by independent financial auditors, the figures shown in the table above do not correspond to figures shown in Table 1.1 under similar headings.

Source: SCDOT

Concerns Over Cash on Hand

In April 2006 the finance and administration committee of the SCDOT commission met and discussed concerns over SCDOT's current and future cash balances. Revenues coming into the department were flat while expenditures were rising. According to a department official, this could result in future cash shortfalls as early as the first quarter of FY 06-07. Lower federal funding for FY 05-06 (see Table 1.2), higher costs of construction, and flat fuel tax revenues were all cited as reasons for the department's cash troubles. In response, the SCDOT commission asked staff to prepare a monthly cash flow forecast so that appropriate decisions could be made concerning the expenditure of funds. Agency officials indicate they need between \$50 and \$100 million cash on hand in order to make on-going payroll, construction, and debt service payments. A May 2006 cash forecast indicates that SCDOT's cash balance may dip below \$50 million during the last quarter of FY 06-07. Cash management concerns may impose limits on future highway construction and maintenance. The agency's funding issues mandate the prudent expenditure of all available resources.

Chapter 1
Introduction and SCDOT's Funding

Contract Management

Contracts for Construction and Resource Management (CRM)

In 1999 SCDOT contracted with two private firms to manage a significant number of construction projects. The agency was able to undertake additional projects because funding available for road and bridge construction had increased.

- The 1997 creation of the State Infrastructure Bank to provide financial assistance for major transportation projects gave SCDOT new authority to issue bonds against future revenues.
- Federal highway funds coming into South Carolina had increased significantly.

SCDOT decided to attempt to complete several years' work in fewer years to avoid inflation in construction costs and to complete needed projects. This program is often referred to as the 27-in-7 program (27 years worth of work to be completed in 7 years). Because SCDOT did not have the staff capacity to do the extra work, it decided in 1998 to advertise for one or more construction and resource manager (CRM) firms to serve as overall project manager for multiple, simultaneous SCDOT transportation projects.

In July 1999, SCDOT contracted with two CRM firms to assist the agency with approximately 95 projects. SCDOT divided the state in half (East and West), and assigned each firm approximately half of the projects. As of April 2006, SCDOT had spent approximately \$253 million for the contracts, which are still active. Several CRM projects are ongoing with completion projected for 2006 or 2007.

It was not our objective to evaluate the results of the 27-in-7 program or to review SCDOT's decision to contract out the management of the additional projects instead of hiring additional staff to handle the work internally. To meet our objective of reviewing SCDOT's contract management, we reviewed the procurement of the CRM firms, the contract provisions, and SCDOT's management of the CRM contracts. We concluded that the CRM contracts did not adequately protect the state's interest and resulted in unnecessary expenditure of funds.

Negotiation of Contract Costs

We reviewed the procurement process for the contracts and found that evidence was insufficient to determine why SCDOT accepted the contracts' compensation terms. The contracts were procured using the consultant procurement process described on page 17. In this case, however, the SCDOT Commission itself selected the two contractors from three recommended by a staff committee (there were originally seven proposals). As discussed on page 18, federal regulations require competitive negotiation,

and SCDOT policy requires documentation of the negotiations in the contract file. Since cost cannot be used as a factor in selecting a contractor for a consultant contract, negotiation with the selected contractor is the only way that SCDOT can ensure a reasonable price.

While SCDOT has maintained adequate documentation showing how the CRM contractors were selected, the agency did not furnish adequate documentation of the negotiation of contract costs. There was no documentation showing the amount of compensation initially proposed by the contractors, how much SCDOT initially proposed to pay, how these amounts changed during contract negotiation, and why SCDOT agreed to the terms that it did. This omission is particularly important because the terms of the contracts were not favorable to the state and resulted in unnecessary expenditure of funds. Evidence from the selection process indicates that SCDOT negotiators failed to protect the state's interest in ensuring a cost-effective contract.

Contract Provisions Unfavorable to the State

Several compensation provisions in the CRM contracts are not in accord with SCDOT's usual practices, which are designed to control costs and ensure positive results. After reviewing evidence from the selection process, we could not determine why the final contract provisions did not contain safeguards to ensure the projects' cost-effectiveness.

Fixed Payments

The contracts provided for fixed payments prior to the work being completed.

The contracts provided for \$62 million in program and financial management fees to be paid on a fixed basis, not related to progress of the work. An additional \$50 million in construction management fees and \$2 million in fees for overseeing preliminary engineering were to be paid on a fixed basis, not based on the progress of the work. Paying a fixed price in advance does not provide adequate accountability for the contractors' performance. With the exception of limited start-up costs, SCDOT's other consultant and construction contracts provide payment only for work that has been completed. Also, the National State Auditors Association *Best Practices in Contracting for Construction Services* states that payments should be tied to the acceptance of deliverables or the final product.

Prior to contract negotiation, SCDOT and the CRM contractors proposed that payments should be based on progress. SCDOT's requests for proposals (RFPs) stated that the successful firm should propose a means of

compensation through which “compensation is minimized until program milestones are met.” The compensation plan proposed by one of the contractors provided for payment of all project-related compensation at performance milestones. The other contractor proposed that its compensation be based on reimbursement of costs and profit, which is the norm for SCDOT’s consultant contracts. We found no reason why SCDOT officials agreed to fixed payments after the proposals contained terms corresponding to good business practice. Paying for services prior to their being received does not provide good control and results in loss of interest revenue. Also, without evidence of the contractor’s costs, there is no way to know whether the compensation is appropriate.

Having fixed fees for program and financial management resulted in the contractors being paid approximately \$8.7 million for projects that were eliminated from the contracts.

Although the contracts listed fixed projects for which the contractors would provide services, SCDOT could change the projects assigned to the contractors. The contracts provided that \$62 million in program and financial management fees would be paid unless the total number of assigned projects was increased or decreased by 20%. The contractors were not assigned program management responsibility for any additional projects, but they did not manage nine projects on the original list, and their program management responsibilities were cut back for other projects. Because of the fixed payment provision, they still received the entire program and financial management fees for the projects that were eliminated from their responsibility. We estimated this overpayment at \$8.7 million, based on the budgets of these projects. The contracts did not provide the necessary controls to prevent the contractors from being paid for work they did not perform.

Program and Financial Management Fees

Evidence indicates that the program and financial management fees were set too high, costing SCDOT millions.

As shown in Table 2.1, the CRM contracts provided specific compensation for different activities carried out by the contractors. The fixed payments for overall program and financial management of \$62 million were approximately 4.5% of the total budget for the projects managed. We could determine no reason for the percentage allocated to the program and financial management payments. Prior to the contracts being signed, a letter from one of the contractors describing its proposed program management fee stated that the fee would include financial management and would be capped at 2% of the assigned program budget. The other contractor explained its compensation plan with an illustration showing program management at 2%. If the contracts had provided for program/ financial management fees of 2% instead of 4.5%, SCDOT and the state would have saved approximately \$32 million that could have been used to fund other projects.

Table 2.1: Compensation in CRM Contracts

TYPE OF COMPENSATION	AMOUNT
Engineering Design	\$ 29,044,000
Overseeing Engineering Design	2,000,000
Services in Acquiring Right-of-Way	*18,323,744
Construction Management	146,499,000
Overall Program Management	54,363,043
Overall Financial Management	7,786,076
Information Technology	**9,870,895
TOTAL	\$267,886,758

* Amount paid as of April 2006, determined by rate for individual services.

** Amount authorized as of April 2006.

Source: SCDOT

Little Incentive for Performance

Despite SCDOT's desire for incentive-based proposals and the willingness of the contractors to risk 20% of their program/financial management fee based on performance, the contracts provided a maximum risk of 7.7%.

SCDOT's requests for proposals stated that it was interested in "incentive-based proposals rather than traditional methods of compensation." Both contractors in their presentations to SCDOT said they would place 20% of their project management fees at risk, based on either timely completion of projects or cost underruns. However, the final contracts placed a maximum of 7.7% of the program management fees at risk, based on SCDOT's semi-annual general evaluations of contractor performance. Also, although there would have been some risk involved for the contractors in undertaking, at a fixed price, projects for which the plans were not final, these risks were in fact minimal. According to SCDOT, the project budgets were adjusted for inflation prior to contracting. Also, if the scope or cost of the project increased, the contractors were given additional compensation for the projects (see p. 14).

Payment Schedule

The CRM contracts provided for payments to the contractors every two weeks, resulting in loss of funds to SCDOT.

A draft version of the CRM contracts provided for monthly payments to the CRM contractors. However, the final contracts provided for payments every two weeks. SCDOT's standard contracts for paying consultant and construction contractors provide for monthly payments. We estimated that, as of April 2006, the CRM payment schedule has cost SCDOT approximately \$237,000 in lost interest.

SCDOT's Contract Management

We also reviewed SCDOT's management of the CRM contracts. While SCDOT made some appropriate efforts to control contract costs, we also identified areas where controls could have been improved. The CRM contractors had different levels of responsibility for the projects in the contract.

- For 20 projects, the contractors were responsible for handling all project activities from start to finish.
- For 64 projects, for which SCDOT already had a contract to design the project, the firms were to provide oversight of the design work and, for most of these projects, supervise the right-of-way acquisition and construction activities.
- For 11 projects, SCDOT was responsible for handling all project activities with the CRM contractors to assist only in managing the construction process.

Efforts to Control Costs

As discussed, the provisions of the CRM contracts were unfavorable to the state and resulted in excessive expenditures. We found that SCDOT took some steps to control the costs of the contracts.

- The CRM contracts provided that the program and financial management fees be paid over five years with a fixed price for a two-year extension that totaled \$16.6 million "if the agreement is... extended." SCDOT did not extend the program and financial management fees beyond the five-year period, thus avoiding an additional \$16.6 million in these high-cost fees.
- As discussed below, SCDOT had to spend its resources to oversee the projects that the CRM contractors were supposed to be managing. In 2001, SCDOT negotiated contract reductions in the total amount of \$1.1 million to provide some reimbursement for its management. However, this amount was far less than the amount SCDOT spent to oversee the projects (see p. 14).
- When SCDOT removed projects or portions of projects from the responsibility of the CRM contractors, it reduced their payments for the specific services they were to perform, such as designing the project or construction management. These reductions, made through engineering directives and contract modifications, totaled \$16.3 million. As

discussed above, the contracts did not allow for the program and financial management fees to be recouped. Also, additions to the contracts for increases in the scope of the work were greater than these reductions (see below).

However, we also identified other areas where the SCDOT may not have done all that it could to keep costs down.

- When the scope of a project the contractors were managing had increased, SCDOT modified the contracts to increase the compensation due to the contractors. These increases totaled \$18.1 million. In some cases, it appeared that the increases should have been included in the fees already allocated. For example, although SCDOT paid an estimated \$8.7 million in program management fees for projects that the contractors did not perform (see p. 11), they increased the program management fee by \$142,000 for one project that had not been completed when the program management fees were not extended beyond the five-year period.
- As discussed (see p. 18), as required by federal regulations and SCDOT policy, SCDOT should negotiate the cost of services provided by consultants. We reviewed the documentation for the amounts that the CRM contractors received in increased payments, and found that in most cases there was no evidence that SCDOT negotiated the price it paid for these services. We requested documentation of negotiation for seven contract increases — SCDOT furnished evidence that the contractors' proposed costs were negotiated for just one of these cases.

CRM Contractor Performance

The CRM contractors generally performed the tasks they were assigned. As of May 2006, approximately 62 of the 95 projects they were involved with had been completed. However, evidence indicates that CRM performance in managing construction projects was no better than that of SCDOT managers. In fact, although the CRM contractors were to manage their assigned projects, SCDOT also spent substantial time and effort overseeing these projects. This increased overall project cost.

- Approximately 20 projects were originally designated "turnkey," which meant that the contractors were to manage all phases of the projects with no involvement from SCDOT. The CRM contractors' responsibility was cancelled or cut back for eight of these projects (see p. 11). Although the contractors were assigned responsibility for totally managing the projects, we found that SCDOT incurred \$3.3 million in internal charges for oversight of these projects.

- SCDOT also incurred substantial internal project management costs for many of the 64 projects for which the contractors were to oversee project design contracts which had already been signed by SCDOT, and oversee right-of-way and construction. For just 19 of these projects which the State Infrastructure Bank funded, SCDOT incurred \$11.5 million in internal project management charges.

We also compared the results of 41 construction projects completed by November 2005 that were managed by the CRM contractors with the results of 1,263 construction projects managed by SCDOT and completed in the same period. We found that the projects managed by the CRM firms were 7% more over budget than those managed by SCDOT. There was an insignificant difference (1%) in the on-time performance of the projects in the two groups. We found that the CRM contractors generally received moderately positive performance evaluations from SCDOT managers, averaging 2.3 and 2.4 on a 4-point scale. One of the contractors received two overall negative evaluations. The CRM contractors received a total of \$538,717 in incentive payments for their contract performance.

Information Technology Expenditures

As of April 2006, SCDOT spent approximately \$8 million through the CRM contracts for information technology. In addition, the contractors received \$7.8 million in financial management fees for tasks which included developing a comprehensive financial information system for SCDOT's funding programs and projects. Both of the CRM contracts included provisions for SCDOT to pay up to \$2.6 million (\$5.2 million total) for IT services. In 2005 SCDOT modified one of the CRM contracts to increase the limit on IT services from \$2.6 million to \$7 million. As of April 2006, SCDOT had paid one of the contractors \$5.7 million and the other \$2.3 million for IT services. We identified issues that question the cost-effectiveness of these expenditures.

Procurement

The procurement of information technology services through the CRM contracts may have resulted in higher costs.

SCDOT normally procures information technology services through a competitive process. The IT projects authorized through the CRM contracts did not go through a competitive process. We reviewed the documentation authorizing the CRM contractors to provide specific IT projects and found no evidence that the prices the contractors proposed were negotiated. For items that are procured through the consultant procurement process, SCDOT is to negotiate the price with the selected contractor (see p. 18). This is the only way that SCDOT can ensure that the price is reasonable. Also, for some of

the IT services procured from a subcontractor through CRM, SCDOT paid an extra fee (5%) to the CRM contractors for administrative services, specifically invoicing and payment processing. As of April 2006, SCDOT had paid this contractor 13 payments totaling \$2.85 million, including approximately \$136,000 for the administrative services. SCDOT could have processed the 13 payments to the contractor for less than \$136,000.

Systems Quality

The quality of the systems developed by the contractors may be questioned.

The CRM contracts stated that the contractors were to modernize SCDOT's current program and financial management system and to assist in the development of an integrated transportation management system (ITMS). According to an SCDOT official, the ITMS, a system that all of SCDOT's systems will be connected to, has not yet been completed. We reviewed allegations and SCDOT employee criticism of the CRM's IT work. It was not in the scope of our work to audit SCDOT's information systems. However, we did have experience with the Financial Management and Strategic Planning system (FMSP) developed by the CRM contractors. When we requested data on the cost and expenditures for the projects assigned to the CRM contractors, the information from FMSP was not readily available, and when received was unreliable. Throughout SCDOT, staff still rely heavily on manual processes to compile information (see p. 2).

CRM Claims of Cost Savings

Based on self-reported information from the CRM contractors, SCDOT has claimed that the contractors have saved \$120 million. Approximately \$92 million (76%) of the savings claimed by the contractors are termed "avoidance cost savings," which means that they were potential costs beyond the contract budgets that were not incurred. These CRM claims are not possible to validate. Evidence indicates that construction projects managed by SCDOT were actually closer to their target budgets than those managed by the CRM contractors, and we could not obtain reliable information about total project costs (see above) from SCDOT. Also, SCDOT's internal costs incurred in managing the CRM projects (see p. 14) should be offset against any savings claims.

Conclusion

Contracting with the CRM firms for project management allowed SCDOT to complete more projects. We did not conclude that this approach was flawed — there would have been advantages and disadvantages to other approaches, such as hiring additional staff for a temporary period. However, by failing to appropriately safeguard the interests of the state in the terms of the contracts' compensation, funds were wasted that could have been used to complete needed construction projects.

Recommendations

1. As required by federal regulation and SCDOT policy, SCDOT should negotiate the terms and retain documentation of negotiation for all of its consultant contracts.
2. In contracting with consultants, SCDOT should follow accepted practices to provide accountability for contractor performance and minimize costs. These include:
 - Never accepting contract provisions which would allow the contractor to be paid for services that it did not provide.
 - Paying contractors only when deliverables have been received.
 - Managing the frequency of its payments to contractors to maximize funds available for the benefit of the state.

Preconstruction Contracts

Preconstruction activities occur before construction on a bridge or road begins. SCDOT must design the road or bridge project, obtain the necessary environmental permits and purchase the property needed for the project (obtain the right-of-way). SCDOT may perform this work in-house or contract it to consultants. As of March 2006, SCDOT had 436 ongoing preconstruction contracts with a total value of \$241 million, of which \$130 million had been paid. We reviewed the procurement of these contracts including selecting the contractors, estimating the costs of the contracts, and negotiating the contract price. In some cases, we found evidence that SCDOT has not ensured that the process is fair and the contracts are cost-effective.

Because most of SCDOT's projects are funded in part with federal funds, the procurement of preconstruction contracts is governed by federal law. In contrast to construction contracts (see p. 33), preconstruction contracts are not awarded to the lowest bidder. The procurement process seeks to identify

the most qualified contractor and negotiate a fair price for the job. Federal regulation 23 CFR §172.5(a)(1) requires that agencies use competitive negotiation for the procurement of engineering and design-related services; however, “price shall not be used as a factor in the analysis and selection phase.” SCDOT’s departmental directive for obtaining professional consultant services states that the objective for these procedures is to:

[e]nsure that, through negotiation and contract administration, public funds are utilized in a manner consistent with appropriate state and federal rules and regulations by ensuring competition between consultant firms is part of the process to reduce cost.

There are two types of contracts which are procured by SCDOT’s office of contract services — consultant and on-call consultant contracts. Consultant contracts are generally for a specific project and could include road or bridge design or planning safety improvements for intersections. SCDOT selects on-call consultants on an “as-needed basis.” A maximum dollar amount is set for these services which are to be performed during a specific time period, not to exceed three years. SCDOT maintains a list of the firms which are qualified and available and contracts with these firms as their services are needed. These contracts are for services which are needed routinely but do not generally cost more than \$100,000. Examples include archaeology, environmental, and hydrology, which encompasses analyzing water flow and designing drainage.

In order to evaluate how SCDOT handles the contract process, we reviewed a sample of consultant contracts and on-call contracts. This review included the selection of consultants, SCDOT’s cost estimates, and price negotiation.

Procurement of Contracts

Evidence indicated that SCDOT’s procurements of preconstruction contracts do not always ensure the most qualified contractor receives the job. The SCDOT commission approves requests for preconstruction contracts. The project is then advertised in the Budget and Control Board’s *South Carolina Business Opportunities*. A technical advisory group (TAG) made up of SCDOT staff scores all the proposals based on the selection criteria and submits an alphabetical list of the most qualified firms to a selection board. The selection board, a three-person group of SCDOT staff appointed by the executive director, selects the firm(s) to be negotiated with for the project. SCDOT often advertises several projects in one solicitation, so more than one firm may be selected. From our nonstatistical sample of 20 consultant contracts for a specific project, we reviewed 10 selections involving 14 firms. The contracts in the sample had a total value of \$39 million. We found that:

- Firms which did not receive the highest rankings have been selected for projects.
- Time between the advertising and signing of contracts was lengthy.
- Cost estimates for projects were sometimes much less than the contract price.

Selection of Contractor

In five of the ten selections reviewed, SCDOT selected firms which did not receive the highest scores based on the written criteria. For most of these selections, the technical advisory group, which had scored all of the firms according to the selection criteria, did not submit the highest ranking firms to the selection board. For example, in one case, the TAG was to submit the three most qualified firms to the selection board. The firms submitted to the board were ranked second, fifth, and sixth out of the nine proposals received by SCDOT. The firm that ranked fifth received the contract. According to a SCDOT official, the TAG may consider factors other than the ones included in the selection criteria when making recommendations to the selection board.

Just as the technical advisory group did not recommend the highest ranked firms, the selection board also chose firms that did not receive the highest ranking. Although the board does not consider the scores of the TAG, it does use the strengths and weaknesses of the firms as evaluated by the TAG. Some examples of selections made by the selection board include:

- For one project, a firm ranked 18 out of 23 firms was selected. The technical advisory group had not submitted this firm to the selection board for consideration.
- For another project, a firm ranked 11 out of 23 firms was selected. Five firms were selected from this solicitation. The 11th ranked firm was one of two for which the technical advisory group submitted negative comments to the selection board.

The objective of the procurement process, according to SCDOT procedures, is to ensure an “independent, objective evaluation of all firms” and the “selection of the firm most qualified to perform the work specified in each contract.” SCDOT has developed criteria for the technical advisory groups to use in evaluating the proposals. However, both the TAG and the selection board can consider factors not included in the criteria or in the firm’s

proposals. According to an SCDOT official, this is to ensure that SCDOT considers all the factors when making a selection.

The selection criteria should include all the relevant factors relating to a firm's qualifications for a project. This would help to ensure that the process is independent and objective. SCDOT could change the selection criteria to include all relevant factors and the TAG could use just the criteria to evaluate the proposals. The selection board could then consider any unique conditions when choosing the firm(s) for the projects. Without objective, inclusive criteria, SCDOT cannot ensure that the most qualified firm has been selected for a project.

Other Procurement Issues

We identified other issues related to the procurement of consultants for preconstruction.

- In our sample, the time between the advertising of a project and the signing of the contract averaged 237 days. A 2004 audit of the Colorado Department of Transportation's management of contracts found that:

... [l]engthy contracting timelines unnecessarily delay the start and completion of projects. In addition, lengthy contracting timelines adversely affect the department's ability to effectively manage project resources and promote fiscal accountability.
- The cost estimates prepared by SCDOT when requesting a consultant were much less than the contract price (see p. 22). In our sample, contract price was an average of 46% higher than the cost estimate. For construction contracts, federal guidelines state that for at least 50% of projects, the low bid should be within 10% of the engineer's estimate for the process to be effective (see p. 34). Without accurate cost estimates, it is difficult to predict the cost of a project and evaluate the price proposed by a consultant.
- SCDOT does not properly document the commission's approval of a project. Prior to advertising for consultants for a project, the SCDOT commission must approve the solicitation. The only documentation included in the selection file of this approval is a copy of the request to the commission with a handwritten date of the commission meeting. Without a copy of the minutes indicating approval of a project, the commission's approval cannot be determined.

In order to ensure that SCDOT receives needed services from the best contractor for the job, it is important that the procurement process accurately identifies the most qualified firm. Also, SCDOT should more closely estimate the projected cost of the contract and complete the contracting process in a timely manner.

Recommendations

3. SCDOT's technical advisory groups should submit the highest-scored firms to the selection board.
4. If the criteria used for rating contractors does not include all the factors to be considered, SCDOT should change its ranking criteria to more accurately reflect the evaluation of the firms.
5. SCDOT should shorten the time between advertising a project and signing a contract.
6. SCDOT should improve its cost-estimating process to more accurately determine the projected cost of contracts.
7. SCDOT should include documentation of commission approval in the selection files.

Selection of On-Call Consultants

When awarding an on-call contract (see p. 18), SCDOT staff select from a list of all the firms that were qualified through the selection process. The selection of contractors from the on-call list is made by the SCDOT division responsible for that type of work and then reviewed by management. We reviewed the distribution of contracts awarded to firms who were on the list of on-call consultants in each of the 21 areas where on-call services may be required. We found that, for 9 (43%) of the 21 areas of on-call services, contracts were awarded to one or more firms in significantly greater amounts than to other firms. For example, the environmental area had seven firms available for on-call services and only two firms had been awarded contracts.

In March 2006, SCDOT began including memos to the state highway engineer with the on-call contracts that are submitted for his approval. These memos include a list of all the firms on the on-call list for that area, the amount of contracts awarded to each firm, and the amount of contracts pending for each firm. Most of the memos we reviewed did not include an explanation of why that firm was selected for the contract. To clarify the

reasons for the selection, SCDOT should include in the selection files documentation describing the reasons for the selection.

Recommendation

Obtaining a Reasonable Price for Services

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8. SCDOT should continue to include in its selection files documentation of the reasons for selecting a firm from the on-call list.
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Evidence indicated that SCDOT has not implemented adequate controls to ensure that preconstruction contracts are obtained at a reasonable price. Once a firm has been selected as the most qualified for a project, SCDOT negotiates the price and the scope of services to be provided by the consultant. The negotiation process is the only control SCDOT has to ensure a reasonable price. As part of this process, SCDOT prepares its own estimate of the cost of the contract and the firm submits its cost proposal. We reviewed a sample of consultant contracts to determine if SCDOT had prepared cost estimates. We also examined the negotiation documentation to determine if the price was negotiated and the effect that SCDOT cost estimates may have on the contract price.

In our nonstatistical sample of 20 consultant contracts for a specific project, we found that, for 5 (25%) of the 20 contracts in the sample, there was no evidence in the file documenting how SCDOT negotiated the price of the contract. These five contracts totaled over \$6 million. Federal regulations require competitive negotiation and SCDOT policy requires documentation of the negotiations in the contract file. Since cost cannot be used as a factor in the initial selection of a contractor, negotiation is the only way that SCDOT can ensure a reasonable price.

Federal regulation 49 CFR §18.36(f)(1) requires agencies to prepare an independent cost estimate before bids are received "to determine the reasonableness of the proposed contract price." In our sample of 20 contracts, we found the following:

- For 10 (50%) of the 20 contracts, there was no evidence of an independent estimate prepared by SCDOT. For two of these contracts, the negotiation documentation noted that instead of preparing an in-house estimate, SCDOT reviewed hours and scope submitted by the consultant and recommended reductions.

- For 10 of the contracts, there were estimates from SCDOT and the consultant. Evidence indicates that SCDOT may have paid more for contracts without estimates. For those contracts where SCDOT prepared an estimate, the costs were reduced an additional 3 percentage points from those where there was no evidence of an SCDOT estimate. For contracts with an estimate, the final price was an average of \$338,647 lower than the firm's original proposal. For those contracts without an estimate, there was an average reduction of \$177,627.

Audits of the state departments of transportation done by the Oregon Secretary of State and the Montana Legislative Audit Division found that cost estimates could strengthen the negotiation position of the department. By preparing an independent cost estimate prior to contract negotiations, SCDOT can use that estimate in negotiations to reduce the cost of the contract.

Recommendations

9. SCDOT should document contract negotiations as required by SCDOT policy.
10. SCDOT should prepare an independent cost estimate for each proposed contract as required by federal law.

Audits of Preconstruction Contracts

SCDOT's audit program for preconstruction contracts is inadequate, ineffective, and not in compliance with federal law. Because preconstruction contracts are not competitively bid, negotiation of the contract price (see p. 22) and a system of audits are needed to ensure that SCDOT gets a reasonable price for the services provided. We identified the following problems with the audits conducted by SCDOT's external audit office:

- SCDOT does not comply with federal law in verifying overhead rates.
- SCDOT does not have risk-based policies to determine which contracts to audit.
- SCDOT's audits are insufficient, not adequately documented, and not timely.

External Audit Office

The external audit office conducts audits of consultants who have been selected for preconstruction contracts with SCDOT. The office does three types of audits:

PRE-AWARD AUDITS — Performed after a consultant is selected for a contract. The review is to determine if the contractor is financially capable of doing the project.

FINAL AUDITS — Conducted after a contract has been completed. The review verifies that the contractor's costs are accurate and supported by documentation.

PROGRESS AUDITS — Same as final audits except they are conducted for large projects prior to completion of the contract.

All audit reports are sent to the director of the office of contract services. We reviewed the 19 pre-award audits done for the contracts in our consultant contracts' sample (see p. 18) and 4 final audits of consulting firms selected from the final audits done in 2005.

Overhead Rates Not Verified

Preconstruction contractors are paid based on a reimbursement of costs plus a profit percentage. Overhead costs are a large percentage of the fee paid by SCDOT for these contracts. These costs are general expenses, such as administrative costs, including rent and utilities, and fringe benefits. Overhead costs are expressed as a percentage of the direct payroll costs. For the consultant contracts we reviewed, the average overhead rate was 159%. In order to ensure that these rates are calculated correctly, SCDOT is required to verify these costs as part of the audit process.

Federal law requires that the overhead rate used by consultants be determined by a state or federal agency. The American Association of State Highway and Transportation Officials (AASHTO) has published an audit guide for state DOTs to follow in auditing overhead rates. If the state does not audit the rate, the guide includes procedures to be followed when reviewing an overhead rate established by a CPA firm. Once these steps have been followed, a state agency may issue a letter of concurrence with the CPA audit. According to an SCDOT official, SCDOT follows the AASHTO guide in its audits. However, we found that SCDOT does not audit overhead rates in compliance with federal law or AASHTO guidelines.

- SCDOT did not audit the overhead rate in the pre-award audits we reviewed. Instead, the audit reports stated that the proposed overhead rate was approved for estimating purposes. SCDOT's pre-award audit program only requires verification that the rate is applied and calculated correctly.
- SCDOT's final audit review program requires that an overhead audit be obtained or an audit of the overhead rate be done by the auditor. For the four final audits we reviewed, SCDOT obtained an audit of the overhead rate from the consultant. There was no evidence that SCDOT reviewed the working papers of the CPA firms which performed the audit, as required by AASHTO guidelines, or verified the costs with the contractor's financial statements.
- We also reviewed the financial documentation maintained by SCDOT for 15 contractors in our sample. Only 4 (27%) of these contractors had an audit of overhead conducted by another state DOT or a letter of concurrence in a CPA firm's audit from another state DOT. One contractor had only a statement of overhead prepared by the consultant rather than an audit prepared by a CPA.

Because overhead costs make up a large part of the cost of consultant contracts, it is important that these rates are verified. Audits are needed to detect inappropriate rates, such as those inflated by including large CEO salaries as part of the overhead. SCDOT should audit the overhead rates as required by the AASHTO guidelines and develop audit programs which include verifying financial information and documenting the review.

No Criteria for Requesting Audits

SCDOT has no procedures to determine when a pre-award audit of a consultant should be conducted. All of the audits are done at the request of the director of the office of contract services. According to the director, he requests pre-award audits for almost all contracts. However, when we looked for pre-award audits done for the contracts in preconstruction contract samples (see pp. 18, 21), we found that only 9 (45%) of the 20 consultant contracts and 10 (31%) of the 32 contracts with on-call consultants had pre-award audits.

Procedures for audit selection should be risk-based. SCDOT should implement policies requiring pre-award audits to be done for all contracts over a certain dollar amount and for any new contractor. If SCDOT does not complete a pre-award audit, a memo should be included in the selection file stating why an audit was not done. Having objective criteria for pre-award

audits prevents the appearance of favoritism in the selection of consultants for audits.

Audit Program Insufficient

When conducting pre-award audits, auditors follow a standard pre-award review program. Most of the audits are desk audits, reviews of documents submitted by the consultant. Auditors rarely travel to the consultant's office. In our review of pre-award audits, we found the following deficiencies:

- Audits were issued after the contract price had been negotiated. For 4 (44%) of 9 pre-award audits done for the consultant contracts, we found that the reviews were published after the contract price had been negotiated.
- Financial audits used for the reviews were often several years old. For example, a pre-award audit done in 2005 relied on an overhead audit from 2002. Also, some of the financial statements SCDOT relied upon were not audits, but compilations of self-reported financial information.
- SCDOT did not properly document the work completed for the audit. Auditor's initials on the standard audit program indicated that the steps were done, but no workpapers were included in the file.

Pre-award audits are one way that SCDOT has to control costs when price cannot be used in the selection of a consultant. When these audits are incomplete and not timely, they are not effective in controlling contract costs.

Conclusion

The external audit process is an important component of management's ability to control costs in preconstruction contracts when price cannot be used in selecting the consultant. When the process is not adequate to evaluate the costs, SCDOT may not be paying a reasonable price for services. By reviewing appropriate financial information and documenting the audit process, SCDOT would have greater assurance that the costs paid are fair and reasonable.

Recommendations

11. SCDOT should audit indirect costs rates as required by federal law and American Association of State Highway and Transportation Officials guidelines.
12. SCDOT should develop written, risk-based criteria for determining which contracts will have pre-award and final audits done. SCDOT should also require documentation of why an audit was not requested.
13. SCDOT should develop audit procedures for pre-award audits that require audit completion prior to the completion of contract negotiations, current information, and documentation of work performed.

SCDOT's Contracts With an Engineering Consulting Firm

During the course of our review of SCDOT's consulting contracts, several contracts with one firm raised issues about SCDOT's selection and management of contractors. We reviewed the contracts between SCDOT and an engineering consulting firm shown in Table 2.2 and identified several issues. SCDOT paid this firm a total of \$2.6 million in FY 04-05 and FY 05-06 for the four contracts we reviewed.

We found that there were problems with the selection of this firm for contracts, the terms and scope of services in the contracts, and the billings and payments for the services.

Table 2.2: Selected Contracts:
FY 04-05 and FY 05-06

CONTRACT	DATES OF SERVICE	AMOUNT PAID
Management Services	05/11/05 – 05/10/06	\$1,800,000
Management Services (CRM)	01/07/05 – 05/06/05	\$476,000
Highway Improvement Project	01/09/04 – 10/27/05	\$284,000
Hydrology	04/04/05 – present	\$53,000

Source: SCDOT

Selection

The lack of competition for the management services contract and the involvement of SCDOT and Federal Highway Administration (FHWA) management in the contract negotiations could give the appearance of favoritism in the selection of this firm.

- SCDOT advertised on January 10, 2005, in *South Carolina Business Opportunities* a request for qualifications for transportation project management, project scheduling, and engineering services.
- Thirty-eight firms requested copies of the detailed description of the services sought by SCDOT. However, only this consulting firm submitted a proposal for this project. In other selections we reviewed (see p. 19), we found that, when a large number of firms requested the scope of services, an average of 81% of the firms submitted a proposal.
- The SCDOT commission normally approves the use of an outside consultant to provide services to the department. However, for this contract, the executive director acted on behalf of the commission to approve the project so it could be advertised. The commission was then informed at its January 27, 2005, meeting that the project had been advertised.
- Correspondence in the selection file indicated that SCDOT and FHWA executive management were involved in the negotiation process and writing this contract. No other selection files we reviewed included the involvement of SCDOT or FHWA executive management.

We also found there was no written justification for the need for these services or documentation of price negotiation. The contract with this firm for management services has been handled differently by SCDOT than other consultant contracts. When we asked for a list of all consultant contracts, this contract was not provided. Staff did not include it on a database of consultant contracts, but rather kept records for this contract on a separate spreadsheet.

Terms and Scope of Services in Contracts

The scope of services to be provided by this firm for the two management services contracts was very broad and vague. On January 7, 2005, SCDOT requested through the CRM contract (see p. 9) assistance with their project tracking/letting reporting system. This project was assigned to this engineering firm for a four-month period. Because these services were acquired as IT services provided through the CRM contracts, SCDOT did not go through a competitive procurement process to select the firm. The services

provided through the CRM contract ended on May 6, 2005. On May 11, 2005, SCDOT signed a contract with the same firm procured through the process described on page 17. This contract continued the services provided through the CRM contract and added additional tasks. Some of the tasks to be provided were vague, such as "assistance with future department programs" and "staff augmentation."

The contract specifies very few items to be delivered by the company. This makes it difficult to determine the adequacy of the services provided and the need for those services, since there was no justification for them in the selection file. The firm did begin submitting monthly progress reports in October 2005 which described its activities for each task. However, as of June 2006, the last progress report submitted was for March 2006 and only included information relating to one part of one task.

Temporary Employees Hired by the Contractor

SCDOT has paid approximately twice as much as necessary to hire temporary employees through the management services contract. According to the contract, the consultant "will assist [SCDOT] with staffing needs for engineering and other divisions." Many of the firm's employees providing services under this contract were former SCDOT employees. The company emphasized in its proposal that it has a "staff of key former SCDOT employees with over 230 years of experience" at SCDOT.

- The consultant billed for human resource services from SCDOT's former director of human resources. She was listed as a senior engineer and was paid \$43 per hour. With overhead and profit (see p. 24), SCDOT paid \$120.07 per hour. The number of hours she worked cannot be determined as the invoices did not consistently list the number of hours worked by each employee. It is also unclear how human resource services related to the services to be provided under the contract.
- In March 2006, SCDOT requested two additional staff to assist in the C-projects development office. These two employees had just retired from this office and were hired through the management services contract to train less experienced staff and develop a process guide for the C-program. SCDOT paid \$120.07 per hour for these employees including profit and overhead. When they left SCDOT, they were earning \$55 per hour, including fringe benefits.
- For three months, the firm provided secretarial staff while an SCDOT employee was on medical leave. SCDOT paid an average of \$35.95 per

hour for this employee, including overhead and profit. Administrative assistants employed by SCDOT are paid an average of \$17.82 per hour.

Many of the temporary employees hired by the consultant for this contract worked at SCDOT headquarters. Since these employees were not working at the company's office and did not receive office support for their day-to-day activities from the company, the consultant should not receive the full overhead rate for these employees. However, on its invoices, the company did not reduce its overhead rate for any employee.

Hiring these employees through a consultant contract is questionable especially when these former employees could have been hired as temporary employees without paying the overhead cost of 155% and profit of 9.5% charged by the firm. The consultant's annual progress report noted that staff augmentation services were necessary because of "the loss of experienced personnel due to retirements, particularly through the TERI program; vacancies created by promotions; and the need for additional manpower to implement a number of initiatives in a timely manner." SCDOT could address these issues in a more cost-effective manner. We could not determine any reason that SCDOT would choose to hire employees in this manner.

Billings and Payment

The invoices submitted by the consultant did not give adequate information on the services provided. In addition, the payments to the firm have not always been based on reimbursing actual costs which is how consultants are usually paid.

We identified several issues in the payments for services to this firm through the management services contracts.

- The consultant received \$36,678 for the period ending 12/31/04 before the services were requested. There was no documentation in the invoice of the services provided. No one from SCDOT with responsibility for the services provided approved this invoice for payment.
- The firm's project director reported directly to the executive director and the deputy state highway engineer. He also received a pay rate of \$53.42 per hour which exceeds the maximum rate of \$43 per hour SCDOT allows for preconstruction consultants acquired through the procurement process.
- The terms of the contract require the consultant to be paid \$250,000 per month with adjustments to reflect actual costs in the next month's invoice. As stated in the contract, this was "to assist with cash flow."

The invoices submitted by the consultant did not relate the amounts billed to tasks in the contract but provided only a general description of the services provided by the firm's employees. Only the invoices submitted for October and November 2005 included information relating the labor costs to specific tasks. If SCDOT does not have adequate information on the work performed by its contractors, especially without specific items to be produced, it cannot determine if the services have been provided and evaluate the quality of those services.

SCDOT signed a contract with this firm after the services had been provided.

- The company was given, on September 30, 2003, a limited notice to proceed with services for a highway improvement project at a cost not to exceed \$50,000.
- The company signed a contract with SCDOT on November 2, 2005, to work on this project at a maximum cost of \$554,000.
- On December 13, 2005, the office of contract services approved payment on 22 invoices totaling \$284,000 dating from January 9, 2004, through October 27, 2005, for services related to this contract. A memo from the program manager to the office of contract services recommended that these invoices be paid because the scope of the project was continuously modified and the contractor worked in good faith at the request of SCDOT.

By signing a contract after all the services have been provided, there is little assurance that the services were provided as needed. There was no authority for the contractor to provide these services.

SCDOT Audits of Contracts With Consultant

In a pre-award audit, SCDOT auditors recommended against contracting with this firm. On January 24, 2005, SCDOT issued a pre-award review of a proposed agreement with the consultant to provide hydrology services. SCDOT's office of external audit reviewed information provided by the company to determine if the firm was financially capable of performing this contract. The auditor could not recommend that the company be approved for contracting because the firm's liabilities greatly exceeded its assets and it might not be capable of meeting current payments. However, SCDOT did sign a \$58,000 contract on April 4, 2005, with the firm for hydrology services and has paid them \$53,000 for these services. Although SCDOT determined that the consultant should not be approved for contracting,

SCDOT continued to contract with this company for multi-million dollar contracts.

SCDOT's office of agency audits identified several issues with the contract for management services. They conducted a progress review of the contract which was completed in June 2006. The auditors identified several areas of concern for SCDOT to consider before renewing the contract:

- The company does not have an audited overhead rate (see p. 24). This rate should be audited and approved.
- The contract lacks a definite scope and is not task oriented. Deliverables need to be specifically defined.
- Costs are charged to multiple projects equally. There is no legitimate basis for the breakdown of amounts charged to individual projects.
- The auditors found some of the firm's costs to be unallowable. These items were still under review as of September 2006.

The auditors brought these issues to the attention of the appropriate SCDOT staff so that they could be addressed in the contract renewal process. The contract was renewed for one year in July 2006 at a maximum cost of \$2.3 million. There are performance measures and deliverables associated with most of the tasks. However, the overhead rate has not changed, and the billing of costs is not addressed in the contract.

Conclusion

SCDOT's contractual history with this firm raises questions of favoritism and ineffective management of resources. Without definite services to be provided and lack of information in invoices to evaluate the services, SCDOT cannot determine if the services have been provided and have been effective. SCDOT may also have been able to obtain these services more cost-effectively by using temporary employees or obtaining more competition for this project. Because there was no justification for the need for these services in the selection or contract files, the need for the supplemental management services could not be determined.

Recommendations

14. SCDOT should include specific scope of services when contracting with consultants.
15. SCDOT should require that invoices relate all charges to specific contract tasks.

16. SCDOT should hire temporary employees by the most cost-effective means, and avoid paying overhead costs.
17. SCDOT should not pay consultants a full overhead rate when its employees are based at SCDOT.
18. SCDOT should not contract with consultants who are found to be not financially capable of performing the contract.

Construction Contracts

In 2004 and 2005, SCDOT awarded approximately \$1.4 billion in construction contracts. These contracts were awarded by a competitive procurement process. Prospective contractors bid on the projects and contracts were awarded to the lowest bidder. We reviewed SCDOT's management of construction contracts and considered its performance in two primary areas of construction contract management:

- Managing a procurement process that ensures adequate competition and quality contractors.
- Minimizing cost overruns and delays in the completion of construction projects.

We found that SCDOT had ongoing efforts to improve results in each of these areas.

Oversight of the Procurement Process

A competitive procurement process is necessary to minimize project costs. In many cases, SCDOT does not get the level of competition that would be desirable to control construction costs. SCDOT received only one or two bids for 23% of 242 construction contracts that were closed in FY 04-05. The LAC's 2001 review of SCDOT's road paving contracts cited lack of competition as an issue of concern. SCDOT implemented several changes in its construction procurement process in response to the 2001 audit. These changes included:

- Lessening the opportunities for collusion by no longer holding bid openings at a Columbia hotel and requiring that all bids be submitted electronically.
- Implementing written policies that follow federal guidelines to specify when a bid is to be reviewed for possible rejection. The guidelines include consideration of the level of competition in the bidding process.
- Improving its capacity to identify problems with bids by using bid analysis software.

Estimating Project Costs

SCDOT has also improved its ability to estimate the costs of projects prior to reviewing bids. Our 2001 audit found that SCDOT was not meeting federal guidelines regarding the accuracy of its engineers' estimates of project costs. According to the Federal Highway Administration guidelines, "the estimate must have credibility if the bid review process is to be effective." The guideline states that for at least 50% of projects, the low bid should be within 10% of the engineer's estimate. In FY 00-01, just 43% of the bids were within 10% of SCDOT's estimate. We reviewed SCDOT's current performance in the accuracy of its project cost estimates and found that for contracts awarded in FY 04-05, SCDOT's estimates met the 50% guideline.

Analyzing Bidding Patterns

SCDOT needs to take further action to analyze bidding patterns. Its bid analysis software compares the bids to each other and to the SCDOT estimate, and can help officials identify unbalancing in the bids. Such practices include "frontloading" the bid so that the bidder would get more money up front, or manipulating the prices of different materials to inflate the cost of the project. However, according to officials, in order to do more sophisticated analysis and detect possible collusion in bidding, SCDOT needs to add more contractor information, such as ownership and affiliation information, geographic information, and "work type" information to its database. SCDOT should proceed with this process, which is necessary to ensure the integrity of the bidding process.

Contractor Qualifications

Because SCDOT must award highway construction contracts to the lowest bidder, ensuring that the low bidder is qualified to do the work is important. SCDOT's construction contractors must be pre-qualified in order to bid on projects. The pre-qualification process determines whether the contractor has the personnel, experience, and equipment to do the work. In addition, SCDOT is currently implementing a process whereby evaluations of contractor performance on previous contracts may be considered in the procurement process.

Beginning in January 2005, SCDOT implemented a new performance evaluation system for its construction contractors. The evaluation has four parts, with 70% of the score based on objective criteria, including the project's on-budget and on-time performance. In April 2006, SCDOT officials sent warning letters to low-scoring contractors and placed 11 contractors on probation. If the contractors do not meet the terms of the

probation and improve their performance scores, they may be disqualified from bidding on future contracts with SCDOT. Obtaining and using performance information in the bidding process should help to ensure that contractors meet performance standards and are capable of completing a high-quality project.

Recommendations

19. SCDOT should implement more comprehensive bid analysis techniques to allow it to detect collusion or other improper bidding practices.
20. SCDOT should continue to implement its plan to use the results of contractor performance evaluations in determining which contractors are eligible to bid on projects.

Minimizing Cost Overruns and Delays

Partnering

Evidence indicates that SCDOT's use of partnering, a formal collaboration between the contractor and SCDOT, has improved its ability to complete projects within budget and on time. Partnering has proven to be a successful project management technique in a variety of settings, including other departments of transportation. Beginning in October 2003, SCDOT required its construction projects to be managed using a partnering process. The partnering process involves an initial facilitator-led workshop for SCDOT and contractor employees involved in the project. The participants develop a team charter for the project and also agree on an issue escalation process. The object of this process is to ensure that issues and problems are resolved at the lowest level possible and in a timely manner. Depending on the size of the project, additional follow-up workshops are held, and participants conduct evaluations of the partnering process. SCDOT and the contractor share the costs of partnering, primarily nominal facilitator and workshop costs.

Evidence indicates that partnering has improved construction project performance. SCDOT has regularly monitored the on-time and on-budget performance of its construction projects and compared the results for partnered and non-partnered projects. Results have consistently shown that the amount actually paid on completed contracts compared to the amount originally bid has been lower for partnered projects. SCDOT calculated a cumulative \$17 million in savings for partnering as of March 2006. We reviewed the methodology for SCDOT's measures comparing partnered and non-partnered projects and found it to be sound. Partnered projects have also been more timely than non-partnered projects. While the non-partnered

projects have consistently averaged about 5% – 6% behind their target dates for completion, partnered projects have performed in a range from meeting the target date (0% behind) to being 3% – 4% early.

Contract modifications or change orders are a key factor in driving up the costs of construction contracts. SCDOT has found that partnered projects have generally had a lower percentage of change order increases than non-partnered projects (excluding changes to projects that were initiated by SCDOT). They estimated the cumulative savings in change orders at \$10.3 million as of March 2006.

Change Order Item Prices

We also reviewed the prices that SCDOT has paid for construction contract items in original bids compared to the prices they paid in change orders. This is an area where costs can be difficult to control, as there is no bidding process for changes to an ongoing contract. An audit of the Colorado Department of Transportation found that the department paid significantly higher prices for the same items in change orders. We compared original bid prices with change order prices for 85 of SCDOT's most significant items. These items comprised more than 60% of the amount awarded in construction contracts for calendar years 2004 and 2005. We found that SCDOT's change order prices did not differ significantly from the original bid prices.

Contract With CPA Firm

SCDOT paid over \$121,000 to a CPA firm for business advisory services without competitively procuring these services as required by the state procurement code. Agency officials could provide no documentation of the procurement process used for hiring this firm.

Between November 2003 and December 2004, SCDOT paid a local CPA firm \$121,432 to perform tasks such as:

- Structuring the fiscal year operating budget in a format acceptable to senior management and reviewing alternative financing for projects already under construction, primarily the Cooper River Bridge Project.
- Assessing the strengths and weaknesses of the SCDOT finance department's organizational structure and evaluating personnel needs.
- Assisting management with budgets and the review of monthly financial management reports.

- Creating a 10-year planning model to estimate the financial effect of alternate operational and strategic decisions.

According to an agency official, this contract was “a direct negotiation” since the firm had a local presence with the expertise and available staff to accomplish the tasks in the required time frame.

However, the state’s consolidated procurement code requires that contracts be competitively procured. These laws ensure that procurements are the most advantageous to the state, are handled ethically, and will promote increased public confidence in the procedures followed in public procurement.

In cases where there is only one source that can provide the services needed, state law provides that the decision to use this source be documented with an explanation as to why no other source would be suitable. SCDOT did not provide any documentation regarding the procurement of the accounting firm. We could not determine any reason that the services provided by the CPA firm could not have been provided by other firms.

Without sufficient documentation of the selection process, there is no evidence that the firm hired by SCDOT was the most qualified since its qualifications and experience were not evaluated against similar firms. By circumventing procurement procedures, SCDOT did not ensure that the state received the best value for its money. We reviewed billings and other documents which showed that the firm appeared to fulfill the terms of the contract. However, there is no evidence that the financial services were cost-effective. The CPA firm billed SCDOT per hour, at rates ranging from \$175 to \$300 per hour.

Recommendation

21. SCDOT should ensure that all procurements comply with applicable procurement laws and regulations and that appropriate documentation of each procurement is maintained.

Chapter 2
Contract Management

Program Management

Federal Billings Held

We were asked to determine if SCDOT billed the Federal Highway Administration (FHWA) in a timely manner. We found evidence to support allegations that officials attempted to lower SCDOT cash balances during the legislative session by delaying billings for reimbursements from the FHWA. Deferred billings in FY 03-04 and FY 04-05 may have cost the agency more than \$1.5 million in lost interest.

Although SCDOT did not lose federal funds for the projects, the reimbursements from the FHWA for these projects were delayed and SCDOT lost interest income. We could not determine any valid reason that SCDOT deferred federal reimbursement of its expenditures.

Advance Construction Category Used Extensively

Following a process outlined in an agreement SCDOT and the FHWA signed in 2004, SCDOT expends money for construction projects which is reimbursed by the FHWA usually at 80% with a 20% state match (see p. 5). SCDOT generally tries to bill the FHWA twice a month for all expenditures that have been incurred to date. However, in December 2003 SCDOT management and staff met to formulate a plan to "manage federal funds" coming into SCDOT. Under the plan, federal reimbursements were delayed by reclassifying projects to a category called "advance construction." This category essentially means that FHWA has approved the project, but is not obligating federal funds to it. Therefore, all expenditures made by SCDOT for these projects are not reimbursed until the project is converted to a regular federal-aid project.

While it is normal for SCDOT to classify certain projects as advance construction, during these months, according to staff, this category was used extensively instead of an authorized category that would have allowed for timely reimbursement. In addition, SCDOT staff established procedures to discontinue its normal process of adjusting funds for current projects experiencing cost overruns. Therefore, when SCDOT expenditures exceeded the amount of authorized federal funds, no adjustments were made to increase the authorized amount so that SCDOT could be reimbursed. This process further increased the balance that could have been billed to the FHWA but was not.

Table 3.1 shows the total unclaimed amount on the federal billings for periods in FY 03-04 and FY 04-05. The table shows these amounts escalating significantly during December of both years and continuing to rise during January and February. The deferred billings were the expected outcome of the procedures discussed by management in December 2003 which were to

have revenues coming into SCDOT only when needed to meet current payment obligations.

The total of unreimbursed overruns and the projects classified unnecessarily in the advance construction category reached a high of over \$181 million in March 2004 and over \$165 million in February 2005 as shown in Table 3.1.

**Table 3.1: Unclaimed Amount on
SCDOT's Billing to FHWA**

BILLING DATE	UNCLAIMED AMOUNT
FY 03-04	
11/30/03	\$67,398,489
12/31/03	\$100,411,847
01/31/04	\$128,635,628
02/29/04	\$148,296,203
<i>03/31/04</i>	<i>\$181,676,516</i>
04/12/04	\$139,631,349
FY 04-05	
11/30/04	\$66,850,017
12/31/04	\$133,162,366
<i>01/11/05</i>	<i>\$145,845,870</i>
01/31/05	\$156,945,316
<i>02/15/05</i>	<i>\$165,333,708</i>
02/28/05	\$60,612,186

Source: SCDOT

Beginning in March 2005, newspapers in South Carolina began reporting that "the agency hadn't claimed more than \$145 million in federal funding." As shown in Table 3.1, this was the total of the unclaimed federal billings during January 2005. Also, an SCDOT commissioner inquired about the process of billing the FHWA. At this time, SCDOT staff stopped procedures to "manage federal funds" and projects were converted from advance construction status back to authorized status. This allowed the expenditures relating to these projects to be billed to FHWA and reimbursed to SCDOT. These conversions resulted in an unusually large federal billing for the February 2005 month-end bill. Graph 3.2 shows SCDOT's billings to FHWA for January through April 2005. The amount billed for pay date March 10, 2005, of over \$125 million is significantly higher than other billings.

Graph 3.2: FHWA Billings by
SCDOT



Source: SCDOT

Interest Income Lost

SCDOT's cash is invested with the State Treasurer's office in the state's internal cash management pool. SCDOT receives interest income generated from its cash balances on deposit in this account. While it is difficult to calculate the exact amount of interest income SCDOT did not collect due to delaying reimbursements from the FHWA, it is clear that interest income was lost during that time. We estimated the interest lost to be over \$1.5 million for the months involved as shown in Table 3.3. SCDOT stated that it actually earned more interest during the periods of December through March of FY 03-04 and FY 04-05 than during the same period in the previous two years. While we do not dispute that fact, SCDOT could have earned significantly more if it had not delayed claiming reimbursements from the FHWA.

**Table 3.3: Estimate of Interest
Income Lost Due to Delayed
FHWA Reimbursements**

FHWA BILLING DATE	UNCLAIMED AMOUNT ON FEDERAL BILLING	INTEREST CALCULATED ON DAYS IN BILLING CYCLE*
12/31/03	\$100,411,847	\$ 175,708
01/31/04	\$128,635,628	263,264
02/29/04	\$148,296,203	355,058
03/31/04	\$181,676,516	185,839
12/31/04	\$133,162,366	85,468
01/11/05	\$145,845,870	180,138
01/31/05	\$156,945,316	151,342
02/15/05	\$165,333,708	141,799
02/28/05	\$60,612,186	9,712
TOTAL		\$1,548,328

* We calculated this amount using an average monthly interest rate (4.41% for FY 03-04 and 3.56% for FY 04-05) obtained from the State Treasurer's office. The lost interest was based on the unclaimed amount reduced by \$53.5 million, the amount normally carried in unclaimed billing.

Source: SCDOT

Undermining the Fiscal Integrity of SCDOT's Billing System

The agreement between SCDOT and FHWA outlining the billing program between the two agencies states "the joint program relies on the SCDOT's systems and procedures to assure the fiscal integrity of costs incurred in the highway program." SCDOT has an obligation to bill FHWA "under adequate management controls" to assure that the costs incurred are complete, accurate and valid. In addition, as part of this agreement, SCDOT agrees to "submit billings on a current basis." By employing tactics to unnecessarily delay the reimbursement of funds, SCDOT undermines the reliability and fiscal integrity of its accounting records. In light of SCDOT's continual need for cash to pay its employees and contractors as well as debt service (see p. 7), the collection of reimbursements in a timely manner should be of utmost importance.

Recommendation

22. SCDOT should follow the procedures outlined in the Memorandum of Understanding between SCDOT and the Federal Highway Administration (FHWA) to ensure that billings submitted to FHWA are accurate and timely and to assure the fiscal integrity of costs incurred in the federal-aid reimbursement program.

Environmental Issues

EPA's Involvement in Settlement of Environmental Violations

SCDOT spent over \$3 million to address several environmental violations. From 1992 to 2005, SCDOT paid penalties to the Department of Health and Environmental Control (DHEC) and the federal Environmental Protection Agency (EPA) totaling \$163,880. Also, in 2002, the EPA required SCDOT to undertake a \$2.9 million supplemental environmental project (SEP) as part of sanctions stemming from six actions against the agency.

In July 2002 the EPA and SCDOT signed an agreement to settle six actions against SCDOT that had been initiated by DHEC. Four of these actions were for violations at SCDOT facilities, while two violations involved construction activities. These actions are discussed below:

- During construction of the southern connector in Greenville county, stormwater management and sediment controls had not been properly installed (for 19 months) resulting in seven separate discharges of sediment into six streams or rivers.
- SCDOT's Fairplay welcome center's sewage lagoon failed to meet the required effluent limitations 64 times between 1996 and 2001. EPA required SCDOT to construct additional wastewater treatment units to upgrade the facility.
- SCDOT's Gaffney maintenance facility was cited for improperly documenting a shipment of chemically-treated timbers to a landfill and discharging used oil onto asphalt and soil. In addition, emergency information at the site did not comply with requirements and included personnel no longer employed at the site.
- SCDOT's Lancaster maintenance facility was cited for spills of used oil, storing hazardous waste in leaking containers, and failing to appropriately label containers of hazardous waste. Employees at this facility handled and stored containers of hazardous waste in a manner that caused them to rupture and leak.
- SCDOT's Spartanburg maintenance facility was cited for several instances where officials failed to submit proper reports relating to hazardous waste. In addition, emergency information and a required contingency plan were not available at the site. Areas with stained soils, and waste discharges of oil, salt and other materials were noted throughout the site.

- DHEC inspected eight SCDOT bridge maintenance locations in 2000. As a result of these inspections, DHEC documented numerous violations at these sites, including failure to clean up hazardous waste discharges and failing to properly manage hazardous waste storage containers.

SCDOT and DHEC could not agree on an appropriate settlement of these issues. Subsequently, the federal EPA initiated its own enforcement action. In order to settle these six matters with the EPA, in 2002 SCDOT paid a civil penalty of \$150,000. In 2003, SCDOT was reimbursed \$80,000 by its construction contractor in connection with the southern connector violation. In addition to the civil penalty, the EPA required SCDOT to perform a supplemental environmental project (SEP). A SEP is a project that will yield environmental benefits partly offsetting the harmful effects of the violations. The funds spent for a SEP must be in addition to funds that would normally be spent for construction projects. According to the consent agreement and final order signed by SCDOT and the EPA, the SEP costs must be "...in excess of normal costs incurred by the SCDOT for using established construction procedures" SCDOT was required to spend at least \$2 million on the project, an erosion control project using tree limbs, stumps and other vegetation removed from construction sites. These items were ground into mulch and spread back over the disturbed areas. Although SCDOT estimated that it would spend \$2.1 million to implement the SEP, it actually spent over \$2.9 million.

During 2000 and 2001, negotiations were held between officials from SCDOT and DHEC to attempt to settle the six cases discussed above. Evidence suggests that, based on advice from outside legal counsel, SCDOT officials were adamant that no fines should be paid by one state agency to another. Evidence obtained from SCDOT files indicates that DHEC was willing to settle the six cases for a civil penalty of \$125,000 as well as an agreement from SCDOT to bring the affected facilities into compliance with environmental laws and regulations.

When these six cases were taken over by EPA, the civil penalties sought by EPA prior to negotiations with SCDOT were \$655,728. As discussed above, the six cases were finally settled with SCDOT paying a fine of \$150,000 (\$80,000 reimbursed by its contractor) and undertaking the \$2.9 million SEP. SCDOT officials stated that the SEP had beneficial results because its procedures are being used in some current construction projects. However, when violations dictate spending decisions, the agency's ability to prioritize its use of resources is impeded.

Other Environmental Penalties Paid

Between 1992 and 2005, SCDOT paid penalties to DHEC totaling \$93,880 for seven additional environmental violations as listed in Table 3.4. Most of these violations were for environmental violations at SCDOT's own facilities.

Table 3.4: Penalties Paid by SCDOT to DHEC for Environmental Violations Between 1992 and 2005

DATE	FACILITY / PROJECT	VIOLATION	AMOUNT
April 1992	Beaufort Maintenance Shop & Lee County Shed	Failure to comply with laws governing razing building containing asbestos; underground storage tank contamination.	\$20,000
December 1993	Cherokee Maintenance Facility	Violation of hazardous waste management laws.	32,000
December 1993	Union Maintenance Facility	Violation of hazardous waste management laws.	9,000
November 1997	Chester Maintenance Facility	Violation of hazardous waste management laws in disposal of paint drums.	3,000
April 1998	Route 60 Construction Project	Violations of water pollution control permit.	9,880
March 1999	Chester Soil Pit	Violations of hazardous waste management laws.	10,000
November 2005	U.S. I-85 Greenville County	Violations of water pollution control permit.	10,000
TOTAL Penalties Paid			\$93,880

Source: SCDOT.

In these cases, state funds that should have been used for roads and bridges were remitted to the general fund as civil penalties. In order to prevent penalties in the future, SCDOT should ensure that all of its facilities are in compliance with environmental laws. In addition, employees of SCDOT should be properly trained concerning compliance with environmental laws.

Violations During Construction

Changes to permitting requirements scheduled to be made in 2006 should strengthen measures SCDOT already has in place to hold contractors and subcontractors legally responsible for violations of environmental laws. SCDOT and its contractors share responsibility for complying with environmental laws during construction. Violations during construction activities usually involve failure to comply with conditions of a DHEC permit which regulates stormwater runoff from construction sites. During

construction, the vegetation on lands is disturbed causing increased stormwater runoff which deposits sediment into rivers and streams. Under the overall DHEC permit, SCDOT prior to construction must develop and implement stormwater pollution prevention plans to reduce the flow of sediment into the state's waters.

SCDOT's construction contracts contain language that requires the contractor to become a co-permittee with SCDOT in complying with the DHEC permit. Therefore, the contractors become legally accountable to DHEC to ensure compliance with the terms and conditions of the stormwater pollution prevention plans. SCDOT and its contractors are responsible for ensuring that environmental permit requirements are fulfilled. For recent violations, SCDOT and the construction contractor have been named by DHEC as responsible parties. In the majority of these cases, the contractor has been responsible for paying all or part of the penalty levied by DHEC.

Changes to requirements in the DHEC permit held by SCDOT are scheduled to be implemented in 2006. According to an SCDOT official, these changes will require SCDOT to hold erosion control conferences with all contractors, subcontractors, and utility representatives to discuss erosion control plans prior to starting work. In addition, subcontractors will also become co-permittees with SCDOT and will be held legally accountable to DHEC for compliance with stormwater pollution prevention plans.

Recommendations

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23. SCDOT should ensure that it complies with environmental laws and regulations at all of its facilities.
 24. The General Assembly may wish to consider legislation concerning fines between state agencies.
 25. SCDOT should continue to implement procedures to ensure that construction contractors comply with contract terms regarding compliance with environmental laws and regulations.

SCDOT Planning

We examined SCDOT's planning procedures for building and maintaining roads to determine if the process adequately prioritized projects. We found that SCDOT complies with federal regulations and generally has appropriate processes in place for planning construction and maintenance projects statewide.

Construction Projects

SCDOT's process for planning federally-funded construction projects appears appropriate and in compliance with federal guidelines. In 1997, SCDOT began producing a State Transportation Improvement Plan (STIP), which is a five-year estimated funding plan for construction projects for the department. The document, which is required by the federal highway funding bill, lists all federally-obligated funds and state match requirements, program summaries for all categories, and projects for all local planning entities. SCDOT issues a new STIP report typically every two years, though the most recent one was delayed until the newest federal highway bill passed in 2005. SCDOT officials expect the new STIP, which will cover 2007 through 2012, to be available around October 2006. SCDOT officials may add 12-15 amendments each year to update status and funding for projects.

With assistance from SCDOT staff, the SCDOT Commission decides how each year's available federal funds will be allocated among the various categories such as interstate maintenance, bridge replacement, and the urban and rural system program. Although many categories like safety, planning, and enhancements require federally-mandated minimum funding levels, the commission has the authority to increase these levels.

SCDOT collaborates with local officials on specific project selection in the urban and rural system program. These local entities, including Metropolitan Planning Organizations (MPOs) and Councils of Governments (COGs), consist of mayors, city council members, city and county administrators, and area legislators. These local organizations are responsible for conducting studies to assess local needs and make recommendations to SCDOT on project priorities. To determine these priorities, officials evaluate factors such as the local population, labor force, school enrollment, and vehicle registration. SCDOT and local officials also examine present and future traffic volume, how the project supports freight movement and economic development, and how a particular project fits into the state's comprehensive plan. The local entities each submit their own transportation improvement plan (TIP) to SCDOT for inclusion in the STIP report.

Recent Changes to the Planning Process

Local entities have become more involved in the planning process. SCDOT has increased the role of COGs, which address traffic needs in rural areas of the state. SCDOT hopes to eventually bring the COGs to a level of responsibility comparable to their urban counterparts, the MPOs.

Officials have also put a priority on identifying environmental concerns in the planning stages of project development. This practice avoids potential complications that can arise once the project enters the preconstruction phase. SCDOT officials state that in 2004 they began submitting long-range plans to federal and state resource agencies in an attempt to partner with them during the planning process.

Maintenance Projects

SCDOT can only use federal funds on highways, interstates, and some secondary roads that are on the federal highway system. Federal funds cannot be used on routine maintenance, such as mowing or patching pavement. There are approximately 24,500 miles of secondary roads that must be maintained only through state funds. Individual district offices establish priorities for maintenance projects. Officials have stated that they prefer a preventive approach to maintenance, though much of their work is complaint-driven. This is especially true in urban areas. Funding for maintenance has increased significantly between FY 02-03 and FY 04-05 (see p. 6).

SHIMS Projects

Audit requesters expressed concern over the Strategic Highway Plan for Improving Mobility and Safety (SHIMS) legislation that the S.C. General Assembly passed in 1987. In particular, there are questions surrounding what happened to the projects that the SHIMS legislation originally intended to address.

The SHIMS legislation directed a 3¢-per-gallon increase in the motor fuel tax to fund several statewide programs, including a number of statewide transportation projects. The law required the ranking of project priority based on a formula that includes socioeconomic as well as transportation factors. In February 1991, the State Highway Commission adopted a policy of establishing a statewide ten-year improvement plan. This improvement program utilizes all available federal and state funding sources, including SHIMS. Later SHIMS documents, which SCDOT submitted to the General Assembly, include projects on a 10-year plan as well as a 20-year plan.

The SHIMS program faced several challenges after its inception. Federal legislation in 1992 increased appropriations to South Carolina, thereby requiring additional state matching funds. SHIMS legislation was amended by the General Assembly in 1992 to:

- Divert funds from the SHIMS program to match federal highway funds when necessary.
- Contribute \$25 million to pay for Hurricane Hugo damages.
- Segregate \$25 million annually for economic development plus an additional \$10 million in FY 92-93 for a special economic development project.

The General Assembly repealed the SHIMS program in 1993. Taxes previously remitted to the SHIMS fund were then directed to the State Highway Fund. We requested a comprehensive update from SCDOT on the current status of all SHIMS projects from the most recent list (1993). As of July 2006, we had not received these updates and could not determine the status of these projects.

Performance Measures

We reviewed SCDOT's methods for measuring and reporting on its performance. SCDOT has an ongoing strategic plan and has regularly measured many of its actions. Our review concluded that the measures SCDOT has selected are generally appropriate, although some, such as highway fatalities, are measures over which the agency has limited control, and others are not directly related to agency performance. We identified some areas where SCDOT could improve its performance reporting.

Comparative Data

SCDOT has reported comparative performance data that is not valid. SCDOT and other state agencies report their performance to the Governor and members of the General Assembly in an annual accountability report. In each of its last three annual accountability reports, SCDOT reported its national ranking in an annual study that assesses the performance of state highway systems. In FY 04-05, SCDOT reported its ranking for overall cost effectiveness as third in the nation, but this comparative data should not be used for ranking purposes.

The annual *Highway Statistics* published by the Federal Highway Administration, the source of the data in the report used by SCDOT, explicitly warns that, due to data inconsistencies and state-to-state differences, it should not be used for comparative purposes. Data of this sort

must be used only to compare transportation systems with like transportation systems. Also, some of the measures used in the report do not have a standard national definition:

ROAD QUALITY — Three of the twelve measures the report uses to compute a state's ranking are based on this measure. According to an SCDOT official, there is no national standard in measuring road quality. What S.C. considers a high-quality road may be considered lower quality in other states.

URBAN INTERSTATE CONGESTION — This measure is determined on a relative basis and would vary from state to state.

Due to these and other comparability concerns, SCDOT should not report its ranking as a conclusive assessment, as it could be misleading and misunderstood by the public.

We also reviewed the data used to compute the following SCDOT performance measures:

- Percentage of maintenance requests completed within 60 days.
- On-time and on-budget percentage of construction contracts.
- Right-of-way condemnation rate.
- Hits to cable median barriers.
- Work zone crashes and fatalities.

The data for these measures is regularly tracked and based on appropriate sources. However, we noticed some discrepancies between data sources and the results reported in the annual accountability reports. These conditions indicated a need for more careful compilation and controls over SCDOT's performance data.

Communication of Performance Results

SCDOT has not adequately published the extent to which it is achieving its goals. Some of the measures featured in the agency's strategic plan are not reported in its accountability report. For example, SCDOT has a strategic plan goal to improve the on-time and on-budget performance of its construction contracts. However, SCDOT did not report its progress on this measure. We reviewed the data for construction projects completed over the past three years. The results are shown in Table 3.5. This measure would also be appropriate to feature as a dashboard measure since it is an important part of how the public views the agency's performance.

Table 3.5: On-Time and On-Budget Performance of Completed Construction Projects

	FY02-03	FY03-04	FY04-05
Number of Projects	230	292	280
On-Time	67%	73%	65%
On-Budget	82%	78%	76%
On-Time and On-Budget	53%	53%	49%

Source: SCDOT

For performance information to be effective, it must be provided in a timely manner and in terms that people can understand. In trying to become more effective, Virginia's DOT has developed a "dashboard", a few select measures that give a quick overview of how the agency is performing at any moment. SCDOT currently has no dashboard or readily accessible performance measures on its website. Virginia's DOT is recognized as having a dashboard that is the standard for providing up-to-date performance information. The measures and their current status are featured on VADOT's website. One of SCDOT's goals is to complete 90% of maintenance requests within 60 days of receipt. SCDOT tracks this measure consistently, and reports it in the annual accountability report. SCDOT could develop a dashboard for this and other measures that are easily understood by and of concern to the general public.

Use of Measures to Manage

We also reviewed the use of performance measures in the SCDOT's strategic planning and management. Timely performance information is vital to managing performance. SCDOT has provided monthly updates on selected indicators to the executive director. In its FY 02-03 through FY 04-05 annual accountability reports, SCDOT reported that monthly indicators were provided to the executive director to help her determine how the agency is performing. SCDOT refers to these indicators as "dashboards." However, these indicators are not performance measures, but rather mostly resource indicators such as toll road dollars, construction contracts awarded, and cable rail costs.

We also found that SCDOT formerly reported performance data on a quarterly basis to senior leadership. In its annual accountability reports through FY 04-05, SCDOT stated that these quarterly reports were used by management in their decision-making. However, these reports were last produced in October 2003. SCDOT should ensure that its accountability reports reflect an accurate picture of the agency's process. According to an SCDOT official, they are currently working to develop an effective reporting format to provide regular performance information to agency management.

Recommendations

26. SCDOT should regularly publish data that shows the current status of its performance measures.
27. SCDOT should implement appropriate controls to ensure that its accountability report is accurate.
28. SCDOT should not publish comparative data that is unreliable or misleading.
29. SCDOT should develop a “dashboard,” accessible to the public, which includes measures that would give the General Assembly, the general public, and other interested parties accurate information regarding the overall effectiveness of the agency at any time.
30. SCDOT should continue to develop and implement a process by which performance data is regularly reviewed and used by top management in its decision-making process.